

radio amateur

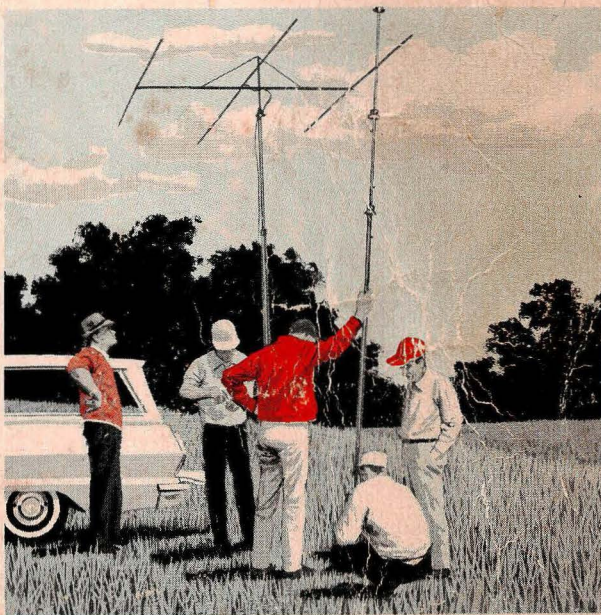
callbook

magazine



JUST A THOUGHT

*There always is tomorrow,
and it is
The steed of hope
that all men mount at dawn.*



summer 1965

in this issue

- 6,161 new licenses issued by FCC since the Spring 1965 edition.
- Over 23,000 changes in listings.
- 269,402 licensed radio amateurs in the U.S.A.
- Radio Amateur prefixes of the world, with map.
- Great circle bearings; "Q" and "Z" signals; postal information.
- A.R.R.L. countries list, phonetic alphabet, DX operating code.
- Time conversion chart, telegraphers' abbreviations . . . and other features.

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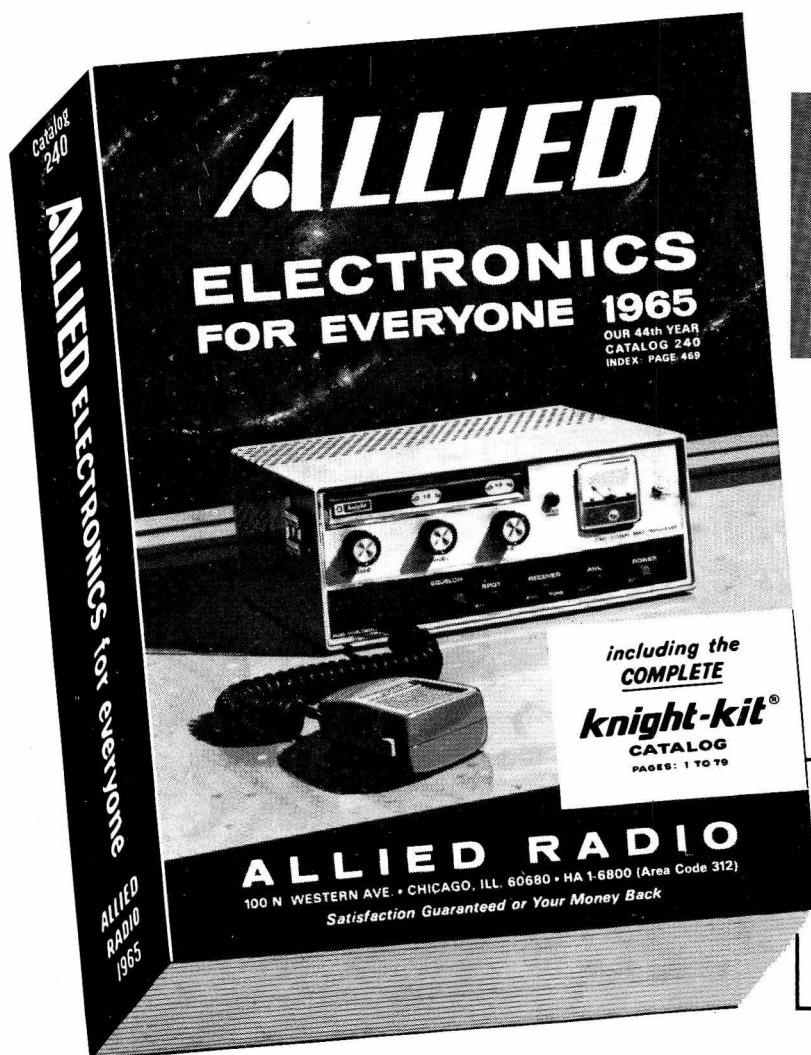


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RADIO AMATEURS OF THE U. S. A.

VOLUME 43
NUMBER 2

ALL K AND W CALLS

SUMMER 1965

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FIRST CALL AREA	1	SIXTH CALL AREA	284
Includes the States of Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont.		Includes the State of California.	
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Includes the States of Arkansas, Louisiana, Mississippi, New Mexico, Oklahoma and Texas.		Includes the States of Colorado, Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota and South Dakota.	
		OTHER CALLS INCLUDING HAWAII AND ALASKA	545

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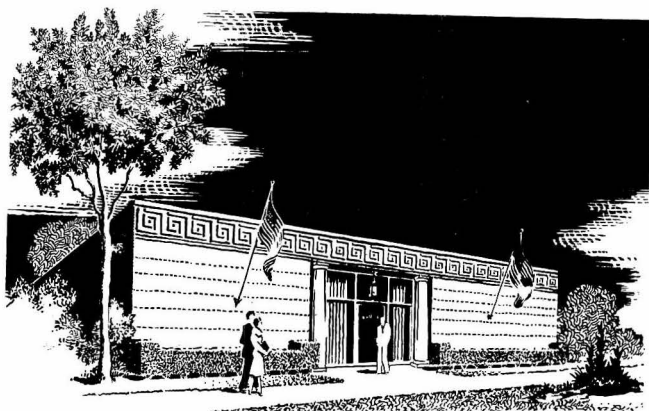
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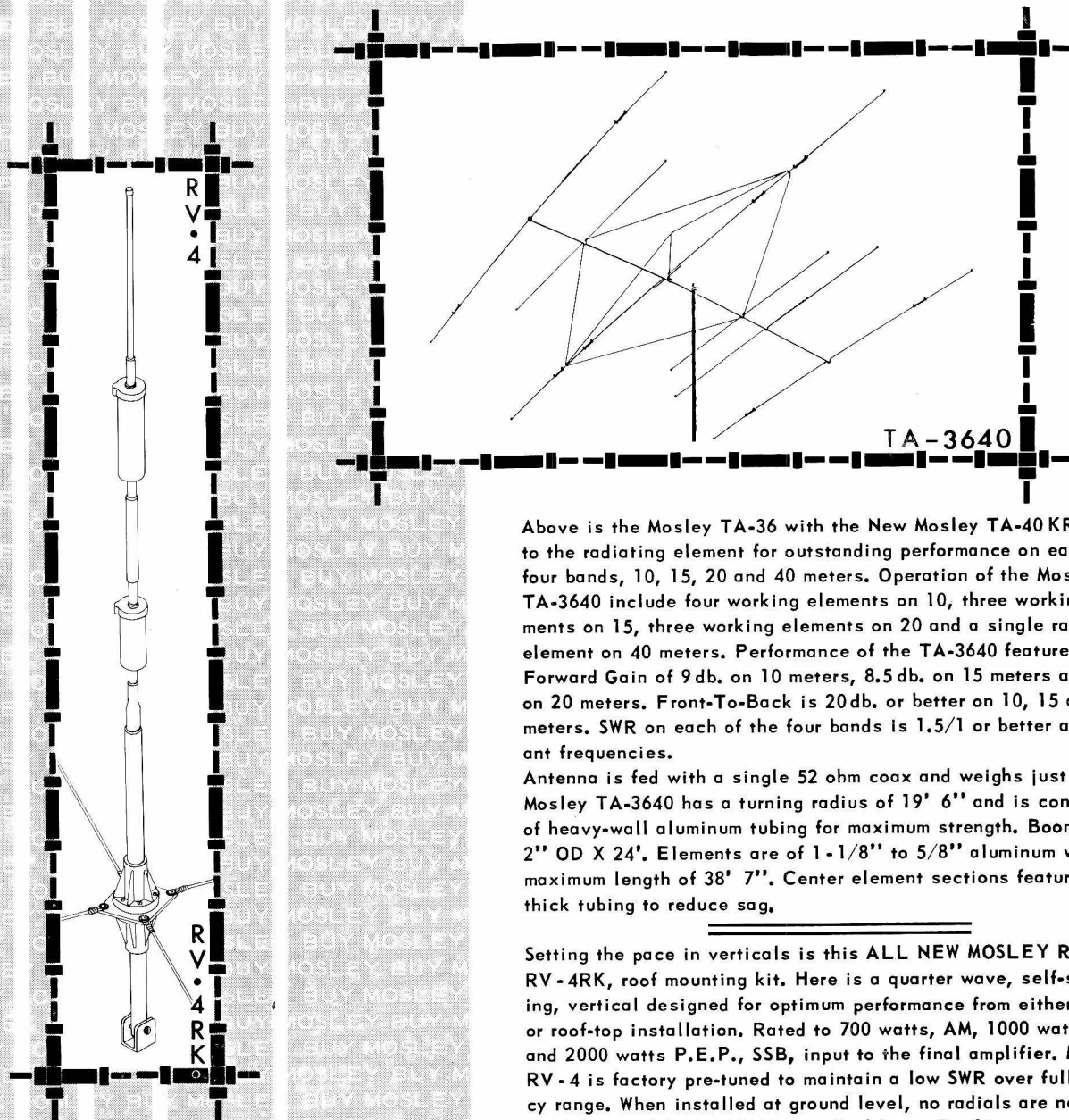
A year around staff, through the use of electronic data processing equipment, evaluates and compiles the directory information received daily from all over the world. Extensive library and historical records are maintained to provide the most complete and accurate Callbook possible to produce.

The Callbook had its beginning back in 1920 when there were just a few radio amateurs. Today, Callbooks and Callbook products are in use in every country of the world.

MOSLEY

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BEAMS & VERTICALS



Above is the Mosley TA-36 with the New Mosley TA-40 KR added to the radiating element for outstanding performance on each of four bands, 10, 15, 20 and 40 meters. Operation of the Mosley TA-3640 include four working elements on 10, three working elements on 15, three working elements on 20 and a single radiating element on 40 meters. Performance of the TA-3640 features a Forward Gain of 9 db. on 10 meters, 8.5 db. on 15 meters and 8 db. on 20 meters. Front-To-Back is 20db. or better on 10, 15 and 20 meters. SWR on each of the four bands is 1.5/1 or better at resonant frequencies.

Antenna is fed with a single 52 ohm coax and weighs just 79 lbs. Mosley TA-3640 has a turning radius of 19' 6" and is constructed of heavy-wall aluminum tubing for maximum strength. Boom is of 2" OD X 24'. Elements are of 1-1/8" to 5/8" aluminum with a maximum length of 38' 7". Center element sections feature double thick tubing to reduce sag.

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A. R. R. L. COUNTRIES LIST

The ARRL Postwar Countries List is the official standard used in connection with the DX Century Club. To qualify for the DX Century Club Award, an applicant must submit confirmations from at least 100 different countries contacted after November 15, 1945, in accordance with the Postwar DXCC Rules. Copies of the DXCC Rules will be furnished by ARRL on request.

AC3.....Sikkim
AC4.....Tibet
AC5, AC7.....Bhutan
AP.....East Pakistan
AP.....West Pakistan

BV, (C3).....Formosa
BY, (C).....China

*C9.....Manchuria
CE.....Chile
CE9, KC4, LU-Z, VK0, VP8, OR4, etc.....Antarctica
CE9 (See VP8)

CE9A.....Easter Island
CE9Z.....Juan Fernandez arch.

CM, CO.....Cuba
*CN2, 8, 9.....Morocco
CP.....Bolivia
CR4.....Cape Verde Islands
CR5.....Portuguese Guinea
CR5.....Principe, Sao Thome
CR6.....Angola
CR7.....Mozambique
*CR8.....Damao, Diu
*CR8.....Goa
CR8, CR10.....Portuguese Timor
CR9.....Macao
CT1.....Portugal
CT2.....Azores
CT3.....Madeira Islands
CX.....Uruguay

DJ, DL, DM.....Germany
DU.....Philippine Islands

EA.....Spain
EA6.....Balearic Islands
EA8.....Canary Islands
EA9.....Ibiza
EA9.....Rio de Oro
EA9.....Spanish Morocco
EA0.....Spanish Guinea
EI.....Republic of Ireland
EL.....Liberia
EP.....Iran
*ET2.....Eritrea
ET3.....Ethiopia

F.....France
FA, FX2, 3.....Algeria
FB8.....Amsterdam & St. Paul Is.
FB8.....Crozet Is.
FB8 (See FB8)
FB8.....Kerguelen Islands
FB8 (See SR8)
FB8 (See FR7)
FC (unofficial).....Corsica
FD (See 5V)
FE8 (See TJ)
FF4 (See TU)
FF7 (See ST)
FF8 (See TY)
FF8 (See TZ)
FF8 (See SU7)
FF8 (See XT)
FF8 (See 6WB)

*FF8.....French West Africa
FG7.....Guadeloupe
FH8, FB8.....Comoro Islands
*F18.....French Indo-China
FK8.....New Caledonia
FL8.....French Somaliland
FM7.....Martinique
*FM.....French India
F08.....Clipperton Island
F08.....French Oceania
FP8.....St. Pierre & Miquelon Is.
FQ8 (See TL)
FQ8 (See TT)
FQ8 (See TN)
FQ8 (See TR)

*FQ8.....French Equatorial Africa
*FR7.....Glorioso Islands
*FR7.....Juan de Nova
FR7.....Reunion
FS7.....Tromelin
F08, YJ1.....Saint Martin
F08, YJ1.....New Hebrides
FW8.....Wallis & Futuna Islands
FY7.....French Guinea & Irtini

G.....England
GC.....Guernsey & Dependencies
GC.....Jersey Island
GD.....Isle of Man
GI.....Northern Ireland
GM.....Scotland
GW.....Wales

HA.....Hungary
HB.....Switzerland
HC.....Ecuador
HC8.....Galapagos Islands
HE, HB0.....Liechtenstein
HH.....Haiti
HI.....Dominican Republic
HK7.....Colombia
HK0.....Bajo Nuevo
HK0.....Malpelo Is.
HK0.....San Andres & Providencia
HL, HM.....Korea
HP.....Panama
HR.....Honduras
HS.....Thailand
HV.....Vatican
HZ, 7Z.....Saudi Arabia

IL, IT1.....Italy
*I1.....Trieste
*I5.....Italian Somaliland
IS1.....Sardinia

JA, KA.....Japan
JT1.....Mongolia
JY.....Jordan
*JZ0.....Netherlands New Guinea

K, W.....United States of America
KA (See JA)
KB.....Baker, Howland & American Phoenix Islands
KC4 (See CE9)
KC4.....Navassa Island
KC6.....Eastern Caroline Is.
KC6.....Western Caroline Is.
KG1 (See OK)
KG4.....Guantanamo Bay
KG6.....Guam

KG6.....Marcus Island
KG6.....Mariana Islands
KG6.....Bonin & Volcano Islands
KH6.....Hawaiian Islands
KH6.....Kure Island
KJ6.....Johnston Island
KL7.....Alaska
KM6.....Midway Islands
KP4.....Puerto Rico
KP6.....Palmyra Group, Jarvis Is.
KR6.....Ryukyu Islands
KS4B.....Serrana Bank & Roncador Cay
KS4.....Swan Islands
KS6.....American Samoa
KV4.....Virgin Islands
KW6.....Wake Island
KX6.....Marshall Islands
KZ5.....Canal Zone

LA.....Bouvet Island
LA.....Jan Mayen
LA.....Norway
LA.....Svalbard
LU.....Argentina
LU-Z (See CE9)
LX.....Luxembourg
LZ.....Bulgaria

M1, 9A1.....San Marino
MP4.....Bahrein
MP4.....Qatar
MP4M, VS9.....Sultanate of Muscat & Oman
MP4.....Trucial Oman

OA.....Peru
OE.....Lebanon
OE.....Austria
OH.....Finland
OHP.....Aland Islands
OK.....Czechoslovakia
ON4, 5.....Belgium
OQ5, 0 (See 9Q5)
OX, KG1.....Greenland
OY.....Faroe Islands
OZ.....Denmark

PA0, P11.....Netherlands
PJ2.....Netherlands Antilles
PJ2M.....Sint Maarten
*PK.....Indonesia
*PK1, 2, 3.....Java
*PK4.....Sumatra
*PK5.....Netherlands Borneo
*PK6.....Celebes & Molucca Islands
PX.....Andorra
PY8.....Brazil
PY8.....Fernando de Noronha
PY8.....Trinidad & Martin Vaz Is.
PZ1.....Surinam

SL, SM.....Sweden
SP.....Poland
ST2.....Sudan
SU.....Egypt
SV.....Crete
SV.....Dodecanese
SV.....Greece

TA.....Turkey
TF.....Iceland
TG.....Guatemala
TI.....Costa Rica
TI9.....Cocos Islands
TJ.....Cameroun
*TL.....Central African Rep.
*TN.....Congo Rep.
*TR.....Gabon Rep.
*TT.....Ivory Coast
*TU.....Dahomey Rep.
*TZ.....Mali Rep.

UA1-6, UN1.....European Russian Socialist Federal Soviet Republic
UA1.....Franz Josef Land
UA2.....Kalinigradsk
UA9, 0.....Asiatic Russian S.F.S.R.
UB5, UT5.....Ukraine
UC2.....White Russian, S.S.R.
UD6.....Azerbaijan
UF6.....Georgia
UG6.....Armenia
UH8.....Turkoman
UI8.....Uzbek
UJ8.....Tadzhik
UL7.....Kazakh
UM8.....Kirghiz
*UN1.....Karelo-Finnish Republic
UD5.....Moldavia
UP2.....Lithuania
UQ2.....Latvia
UR2.....Estonia

VE, VO.....Canada
VK.....Australia (inc. Tasmania)
VK.....Lord Howe Island
VK4.....Willis Islands
VK9, ZC3.....Christmas Island
VK9.....Cocos Islands
VK9.....Nauru Island
VK9.....Norfolk Island
VK9.....Papua Territory
VK0 (See CE9)
VK0.....Heard Island
VK0.....Macquarie Island
*VO (See VE)

VP1.....British Honduras
*VP2.....Anguilla
*VP2.....Antigua, Barbuda
*VP2.....British Virgin Islands
*VP2.....Dominica
*VP2.....Grenada & Dependencies
*VP2.....Montserrat
*VP2.....St. Kitts, Nevis
*VP2.....St. Lucia
*VP2.....St. Vincent & Dependencies
VP3.....British Guiana
VP4.....Trinidad & Tobago
VP5 (See 6Y5)
VP5.....Turks & Caicos Islands
VP5.....Barbados
VP7.....Bahama Islands
VP8 (See CE9)
VP8.....Falkland Islands
VP8, LU-Z.....So. Georgia Is.
VP8, LU-Z.....So. Orkney Is.
VP8, LU-Z.....So. Sandwich Is.
VP8, LU-Z, CE9.....So. Shetland Is.

VP9.....Bermuda Islands
VQ1.....Zanzibar
VQ2 (See 9J2)
VQ3 (See 5H3)
VQ4 (See 5Z4)
VQ5 (See 5X5)
*VQ6.....British Somaliland
VQ8.....Agalega & St. Brandon
VQ8.....Chagos Islands
VQ8.....Mauritius
VQ8.....Rodrigues Island
VQ9.....Aldabra Is.
VQ9.....Seychelles
VR1.....British Phoenix Islands
VR1.....Gilbert & Ellice Is. & Ocean Island
VR2.....Fiji Islands
VR3.....Fanning & Christmas Is.
VR4.....Solomon Islands
VR5.....Tonga Islands
VR6.....Pitcairn Island
*VS1.....Singapore
VS1, 9M2 (See 9M2, 4)
VS2 (See 9M2)
*VS4.....Sarawak
VS4, ZC5 (See 9M6, 8)
VS5.....Brunei
VS6.....Hong Kong
VS9.....Aden & Socotra
VS9K.....Kamaran Is.
VS9H.....Kuria Muria Is.
VS9.....Maldives Islands
VS9 (See MP4)
VU.....Andaman & Nicobar Is.
VU.....India
VU.....Laccadive Islands

W (See K)

XE, XF.....Mexico
XF4.....Revilla Gigeo
*XT.....Voltaic Rep.
XU.....Cambodia
XV5 (See 3W8)
XW8.....Laos
XZ2.....Burma

YA.....Afghanistan
YI.....Iraq
YJ (See FUB)
YK.....Syria
YN, YN0.....Nicaragua
Y0.....Rumania
YS.....Salvador
YU.....Yugoslavia
YV.....Venezuela
YV0.....Aves Island

ZA.....Albania
ZB1.....Malta
ZB2.....Gibraltar
ZC3 (See VK9)
ZC4 (See 5B4)
*ZC5.....British North Borneo
ZC6.....Palestine
ZD1 (See 9L1)
ZD2 (See 5N2)
ZD3.....The Gambia
ZD4 (See 9G1)
*ZD4.....Gold Coast, Togoland
ZD6 (See 7Q7)
ZD7.....St. Helena
ZD8.....Ascension Island
ZD9.....Tristan da Cunha & Gough Island
ZE.....Rhodesia
ZK1.....Cook Islands
ZK1.....Manihiki Islands
ZK2.....Niue
ZL.....Auckland Is. & Campbell Is.
ZL.....Chatham Islands
ZL.....Kermadec Islands
ZL5 (See CE9)
ZL5.....New Zealand
ZM6.....Western Samoa
ZM7.....Tokelau
ZP.....Paraguay
ZS1, 2, 4, 5, 6.....South Africa
ZS2.....Prince Edward & Marion Is.
ZS3.....Southwest Africa
ZS7.....Swaziland
ZS8.....Basutoland
ZS9.....Bechuanaland

3A.....Monaco
3V8.....Tunisia
3W8, XV5.....Vietnam

4S7.....Ceylon
4U1.....I.T.U., Geneva
4W1.....Yemen
4X4.....Israel

5A.....Libya
5B4, ZC4.....Cyprus
5H3, VQ3.....Tanganyika
5N2, ZD2.....Nigeria
5R8, FB8.....Malagasy Rep.
*5T.....Mauritania
*5U7.....Niger Rep.
5V.....Togo Rep.
5X5, VQ5.....Uganda
5Z4, VQ4.....Kenya

601, 2, 6.....Somali Rep.
*6W8, FB8.....Senegal Rep.
6Y5, VP5.....Jamaica

7G1.....Rep. of Guinea
7Q7 (ZD6)
7X2, 3 (See FA)
7Z (See HZ)

8Z4.....Saudi Arabia/Iraq Neutral Zone
8Z5 (See 9K3)

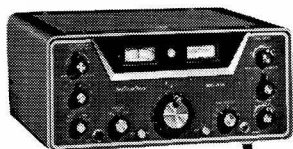
9A1 (See M1)
*9G1, ZD4.....Ghana
9J2, VQ2.....Zambia
9K2.....Kuwait
9K3, 8Z5.....Kuwait/Saudi Arabia Neutral Zone
9L1, ZD1.....Sierra Leone
*9M2.....Malaya
*9M2, 4.....West Malaysia
*9M6, 8.....East Malaysia
9N1.....Nepal
9Q5, QD5, 0.....Rep. of the Congo
*9S4.....Saar
*9U5.....Burundi
*9U5.....Ruanda-Urundi
*9X5.....Rwanda

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INTERNATIONAL RADIO AMATEUR PREFIXES

The following prefixes are listed in alphabetical order for convenience in locating the country when DX calls are heard.

AC3..... Sikkim
AC4..... Tibet
AC5..... Bhutan
AP..... Pakistan

BV..... Taiwan (Formosa)
BY..... China
BY9..... Manchuria

CE..... Chile
CE9..... South Shetland Is.
CE0A..... Easter Is.
CE0Z..... Juan Fernandez Is.
CM,C0..... Cuba
CN..... Morocco
CP..... Bolivia
CR4..... Cape Verde Is.
CR5..... Portuguese Guinea, Sao Tome & Principe Is.
CR6..... Angola
CR7..... Mozambique
CR8..... Goa
CR8..... Timor Is. (Portuguese)
CR9..... Macao
CT1..... Portugal
CT2..... Azores Is.
CT3..... Madeira Is.
CX..... Uruguay

DJ,DL..... West German Federal Rep.
DM..... East German Democratic Rep.
DU..... Philippine Is.

EA..... Spain
EA6..... Balearic Is.
EA8..... Canary Is.
EA9..... Spanish Sahara, Ilni, Ceuta y Melilla
EA0..... Rio Muni
EI..... Ireland
EL..... Liberia
EP,EQ..... Iran
ET3..... Ethiopia

F..... France
FB8..... Austral and Antarctic French Lands,
Amsterdam, St. Paul, Crozet, Kerguelen, Tromelin Is.
FC..... Corsica
FG7..... Guadeloupe Is.
FH8..... Comoro Is.
FK8..... New Caledonia
FL8..... French Somaliland
FM7..... Martinique
F08..... French Polynesia, Clipperton Is.
FP8..... St. Pierre & Miquelon Is.
FR7..... Reunion Is.
FS7..... Saint Martin
FU8..... New Hebrides
FW8..... Wallis & Futuna Is.
FY7..... French Guiana

G..... England
GC..... Channel Is.
GD..... Isle of Man
GI..... Northern Ireland
GM..... Scotland
GW..... Wales

HA..... Hungary
HB..... Switzerland
HB0..... Liechtenstein
HC..... Ecuador
HC8..... Galapagos Is.
HD1..... Manihiki Is.
HH..... Haiti
HI..... Dominican Republic
HK..... Colombia
HK0..... San Andres & Providencia Is.
HM,HL9..... Korea
HP..... Panama
HR..... Honduras
HS..... Thailand
HV..... Vatican City

I..... Italy
II..... Trieste
IS..... Sardinia
IT..... Sicily

JA..... Japan
JT1..... Mongolia
JY..... Jordan
JZ0..... Netherlands New Guinea (West Irian)

K..... United States
KA..... U.S. Personnel in Japan
KB6..... Baker, Canton, Enderbury,
Howland & Phoenix Is.
KC4..... Navassa Is.
KC4AA,KC4US..... Antarctica
KC6..... Caroline Is.
KG1..... U.S. Personnel in Greenland
KG4..... Guantanamo Bay, Cuba
KG6..... Mariana Is. (Guam)
KG6L..... Volcano Is.

KG6S..... Saipan Is.
KG6T..... Tinian Is.
KH6..... Hawaii
KJ6..... Johnston Is.
KL7..... Alaska
KM6..... Midway Is.
KP4..... Puerto Rico
KP6..... Jarvis & Palmyra Is.
KR6,KR8..... Ryukyu Is. (Okinawa)
KS4..... Swan Is.
KS4B..... Serrana Bank & Roncador Cay
KS6..... U.S. Samoa
KV4..... Virgin Is.
KW6..... Wake Is.
KX6..... Marshall Is.
KZ5..... Canal Zone

LA..... Norway, Svalbard, Jan Mayen Is.
LU..... Argentina
LX..... Luxembourg
LZ..... Bulgaria

M1..... San Marino
MP4..... Bahrain and Das Is.,
Muscat & Oman, Qatar, Trucial Oman

OA..... Peru
OD5..... Lebanon
OE..... Austria
OH..... Finland
OH0..... Aland Is.
OK..... Czechoslovakia
ON..... Belgium
OX..... Greenland
OY..... Faeroe Is.
OZ..... Denmark

PA,PI..... Netherlands
PJ..... Netherlands Antilles
PJ2M..... Saint Maarten
PJ5..... Saba Is.
PX1..... Andorra
PY..... Brazil
PY7..... Fernando de Noronha Is.
PY0..... Trindade & Martin Vaz Is.
PZ..... Surinam

SL,SM..... Sweden
SP..... Poland
ST..... Sudan
SU..... Egypt
SV..... Crete, Greece
SV5..... Dodecanese Is.

TA,TC..... Turkey
TF..... Iceland
TG..... Guatemala
TI..... Costa Rica
TI9..... Cocos Is.
TJ8..... Cameroon
TL8..... Central African Republic
TN8..... Republic of Congo
TR8..... Gabon
TT8..... Chad
TU2..... Ivory Coast
TY2..... Dahomey
TZ..... Mali Republic

UA1,3,4,6..... European Russian Socialist
Federated Soviet Republic
UA9,0..... Asiatic Russian S.F. S.R.
UB5..... Ukraine
UC2..... White Russian S.S.R.
UD6..... Azerbaijan
UF6..... Georgia
UG6..... Armenia
UH8..... Turkmen
UI8..... Uzbek
UJ8..... Tadzhik
UL7..... Kazakh
UM8..... Kirghiz
UN1..... Karelo-Finnish Republic
U05..... Moldavia
UP..... Lithuania
UQ..... Latvia
UR..... Estonia

VE..... Canada
VK..... Australia
VK2..... Lord Howe Is.
VK7..... Tasmania
VK9..... New Guinea, Papua,
Christmas, Cocos-Keeling, Nauru, Norfolk Is.
VK0..... Heard & Macquarie Is., Antarctica
V01..... Newfoundland
V02..... Labrador
VP1..... British Honduras
VP2..... Federation of British Territories
in the Caribbean
VP3..... British Guiana
VP4..... Trinidad & Tobago Is.
VP5..... Cayman, Turks & Caicos Is.
VP6..... Barbados Is.

VP7..... Falkland, South Georgia, South Orkney,
South Sandwich, South Shetland Is., Graham Coast
VP9..... Bermuda Is.
VQ1..... Zanzibar
VQ8..... Chagos, Mauritius & Rodriguez Is.
VQ9..... Seychelles Is.
VR1..... British Phoenix, Ellice, Gilbert & Ocean Is.
VR2..... Fiji Is.
VR3..... Fanning, Line Is.
VR4..... Solomon Is.
VR5..... Tonga Is.
VR6..... Pitcairn Is.
VS5..... Brunei
VS6..... Hong Kong
VS9..... Aden, Kamaran, Maldives, Socotra Is.
VU..... India
VU4..... Laccadive Is.
VU5..... Andaman & Nicobar Is.

W..... United States

XE..... Mexico
XE4..... Revillagigedo Is.
XT2..... Upper Volta
XU..... Cambodia
XW8..... Laos
XZ..... Burma

YA..... Afghanistan
YL..... Iraq
YJ..... New Hebrides
YK..... Syria
YN..... Nicaragua
YO..... Rumania
YS..... El Salvador
YT,YU..... Yugoslavia
YV..... Venezuela

ZA..... Albania
ZB2..... Gibraltar
ZC4..... Cyprus
ZD3..... Gambia
ZD7..... Saint Helena
ZD8..... Ascension Is.
ZD9..... Tristan da Cunha & Gough Is.
ZE..... Southern Rhodesia
ZK1..... Cook Is.
ZK2..... Niue & Aitutaki Is.
ZL..... New Zealand
ZL1..... Kermadec
ZM7..... Tokelau Is.
ZP..... Paraguay
ZS..... South Africa
ZS2..... Prince Edward & Marion Is.
ZS3..... South-West Africa
ZS7..... Swaziland
ZS8..... Basutoland
ZS9..... Bechuanaland

3A2..... Monaco
3V8..... Tunisia
3W8..... Vietnam
4S7..... Ceylon
4U1..... United Nations, Geneva
4W1..... Yemen
4X4..... Israel
5A..... Libya
5H3..... Tanganyika
5N2..... Nigeria
5R8..... Malagasy Republic
5T5..... Mauritania
5U7..... Niger
5V4..... Togo
5W1..... Western Samoa
5X5..... Uganda
5Z4..... Kenya
60..... Somali Republic
6W8..... Senegal
6V5..... Jamaica
7G1..... Republic of Guinea
7Q7..... Malawi (Nyasaland)
7X2..... Algeria
7Z..... Saudi Arabia
8F..... Indonesia
8F1,2,3..... Java
8F4..... Sumatra
8F5..... Borneo
8F6..... Celebes & Molucca Is.
9A1..... San Marino
9G1..... Ghana
9H1..... Malta
9J2..... Zambia (Northern Rhodesia)
9K2..... Kuwait
9L1..... Sierra Leone
9M2..... Federation of Malaysia
9M4..... Singapore (Malaysia)
9M6..... Sabah (North Borneo)
9M8..... Sarawak
9N1..... Nepal
9Q5..... Republic of the Congo
9U5..... Burundi
9X5..... Rwanda

SPECIAL ARRL QN SIGNALS FOR NET USE

QNA*	Answer in prearranged order.
QNB*	Act as relay Between and
QNC	All net stations Copy. I have a message for all net stations.
QND*	Net is Directed (controlled by net control station).
QNE*	Entire net please stand by.
QNF	Net is Free (not controlled).
QNG	Take over as net control station.
QNH	Your net frequency is High.
QNI	Net stations report In.* I am reporting into the net.
QNJ	Can you copy me? Can you copy ?
QNK*	Transmit messages for to
QNL	Your net frequency is Low.
QNM*	You are QRMing the net. Please stand by.
QNN	Net control station is * What station has net control?
QNO	Station is leaving the net.
QNP	Unable to copy you (for).
QNQ*	Move frequency to . . . and wait for . . . to finish handling traffic. Then send him traffic for
QNR*	Answer . . . and Relay (or Receive) traffic.
QNS	Following Stations are in the net.* (Follow with list). Request list of stations in the net.
QNT	Leaving net Temporarily (or for . . . minutes).
QNU*	The net has traffic for YOU. Stand by.
QNV*	Establish contact with on this frequency. If successful, move to . . . and send him traffic for . . .
QNW	How do I route messages for ?
QNX	You are excused from the net.* Request to be excused from the net.
QNY*	Shift to another frequency (or to . . . kc.) to clear traffic with
QNZ	Zero beat your signal with mine.

*For use only by Net Control Station

Notes on the Use of QN Signals

- The QN signals listed above are special ARRL signals for use in amateur c.w. nets only. Other meanings that may be used in other services do not apply.
- Some QN signals are for use by net control stations only; these are marked with an asterisk (*). Others have slightly different meanings when used by the NCS and net stations; in this case, the meaning when used by the NCS is marked with an asterisk (*).
- Some QN signals have two meanings, the difference depending on how or by whom used. Examples: (a) QNC, when used as a preface to transmission of a message, carries its first meaning; when used by a station reporting into the net (e.g., W9NCS DE W9NET QNI QNC), it carries its second meaning. (b) QNI, when used by the NCS, is a request for stations to report in; when used by a net station, it means that this station is reporting in. (c) QNJ, when used alone, carries its first meaning; when followed by a call, it carries the second meaning.
- QN signals are never followed by a question mark, even though the meaning may be interrogatory.
- Do not use QN signals on phone nets. Say it with words.
- Use QN signals in nets only. They are not for use in casual amateur conversation.
- Make frequent use of standard international "Q" signals in traffic nets, for meanings not covered by QN signals. Examples: QRU, QRV, QSV, QTA, QTB, QTX, etc.

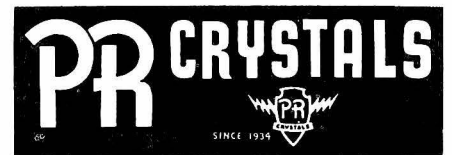
ARRL Communications Department

"Q" SIGNALS

Given below are a number of Q signals whose meanings most often need to be expressed with brevity and clearness in amateur work. (Q abbreviations take the form of questions only when each is sent followed by a question mark.)

QAV	Are you calling me? I am calling
QBT	Am I missing dots? You are missing dots.
QCM	Is there a defect in my transmission? There seems to be a defect in your transmission. What is causing the present interference? The present interference is being caused by
QDH	What frequency is (station) using? (station) is using (frequency).
QIF	Will you tell me my exact frequency in kilocycles? Your frequency is kc.
QRG	Does my frequency vary? Your frequency varies.
QRH	How is the tone of my transmission? The tone of your transmission is (1. good; 2. variable; 3. bad).
QRI	Are you receiving me badly? Are my signals weak? I cannot receive you. Your signals are too weak.
QRJ	What is the readability of my signals (1 to 5)? The readability of your signals is (1 to 5).
QRL	Are you busy? I am busy or busy with (.).
QRM	Are you being interfered with? I am interfered with.
QRN	Are you troubled by atmospherics? I am being troubled by atmospherics.
QRO	Must I increase power? Increase power.
QRP	Must I decrease power? Decrease power.
QRQ	Shall I send faster? Send faster (. . . words per min.).
QRS	Shall I send more slowly? Send more slowly (. . . w.p.m.).
QRT	Shall I stop sending? Stop sending.
QRU	Have you anything for me? I have nothing for you.
QRV	Are you ready? I am ready.
QRW	Shall I tell that you are calling him? Please tell that I am calling him.
QRX	When will you call again? I will call you again at hours (on . . . kc.).
QRZ	Who is calling me? You are being called by
QSA	What is the strength of my signals (1 to 5)? The strength of your signals is (1 to 5).
QSB	Does the strength of my signals vary? The strength of your signals varies.
QSD	Is my keying correct? Are my signals distinct? Your keying is incorrect; your signals are bad.
QSG	Shall I send . . . telegrams (or one) at a time? Send . . . telegrams at a time.
QSK	Can you hear me between your signals? I can hear you between my signals.
QSL	Can you give me acknowledgment of receipt? I give you acknowledgment of receipt.
QSM	Shall I repeat the last telegram I sent you? Repeat the last telegram you sent me.
QSO	Can you communicate with . . . direct (or through . . .)? I can communicate with . . . direct (or through . . .).
QSP	Will you relay to ? I will relay to
QSV	Shall I send a series of VVV ? Send a series of VVV.
QSW	Will you send on . . . kcs.? etc. I will send on . . . kcs., etc.
QSX	Will you listen for (call sign) on . . . kcs? I am listening for on . . . kcs.
QSY	Shall I change . . . kcs. without changing the type of wave? Change to . . . kc. without changing type of wave.
QSZ	Shall I send each word or group twice? Send each word or group twice.
QTA	Shall I cancel nr . . . as if it had not been sent? Cancel nr . . . as if it had not been sent.
QTB	Do you agree with my number of words? I do not agree with your number of words; I will repeat the first letter of each word and the first figure of each number.
QTC	How many telegrams have you to send? I have . . . telegrams for you or for
QTH	What is your position (location)? My location is (by any indication).
QTR	What is the exact time? The time is
QTX	Will you keep your station open for further communication? I will keep my station open for further communication.
CQ	General call to any station. Special abbreviations adopted by ARRL:
QST	General call preceding a message addressed to all amateurs and ARRL Members. This is in effect "CQ ARRL".
QRRR	Official ARRL "land SOS". A distress call for emergency use only by station in an emergency situation. Indicate your call, location, situation and other data, even if no QSO results.

ARRL Communications Department



Fundamental, PR Type Z-2
FREQUENCY RANGES IN KCS.: 1,750
to 2,000 (160M); 3,500 to 4,000 (80M)
7,000 to 7,425 (40M); 8,000 to 8,222
(2M); 8,334 to 9,000 (6M).

Rugged. Low drift, fundamental oscillators. High activity and power output. Stands up under maximum crystal currents. Stable, long-lasting; 1,750 to 2,000 Kc., ± 250 cycles; others ± 500 cycles.

\$2.95 Net
(All Z-2 Crystals calibrated with a load of 32 mmfd.)

Third Overtone, PR Type Z-9A
Hermetically sealed; calibrated 24,000 to 24,666
and 25,000 to 27,000 Kc., ± 3 Kc.; also 28,000 to
29,700 Kc., ± 5 Kc.; .050" pins **\$3.95 Net**



6 Meters, PR Type Z-9A

Fifth overtone; for operating directly in 6-meter band; hermetically sealed; calibrated 50 to 54 Mc., ± 15 Kc.; .050" pins **\$4.95 Net**

SPECIAL TYPES



Z-9R

Type Z-9R Crystals have .486" pin spacing; .050" pin diameter; .758" height above pins; width .720" and depth .309".
Miniature Type Z-13 Crystals have .192" pin spacing; .040" pin diameter; .530" height above pins; width .402" and thickness .150".
Miniature Type Z-13P Crystals are same as Z-13 except for having .017 wire leads instead of pins.

Z-13 (Miniature)

Z-13P

CITIZENS BAND, TRANSMITTER
Supplied in all 23 assigned frequencies. Calibrated .005%. Be sure to specify channel desired, make and model of equipment.
Type Z-9R—Transmitter **\$2.95 Net**
Type Z-13—Transmitter (Miniature) **2.95 Net**
Type Z-13P—Transmitter (Miniature) **2.95 Net**

CITIZENS BAND, RECEIVER
Calibrated .005%. Specifications same as for Transmitter Crystals. Specify channel desired, make and model of equipment.
Type Z-9R—Receiver **\$2.95 Net**
Type Z-13—Receiver (Miniature) **2.95 Net**
Type Z-13P—Receiver (Miniature) **2.95 Net**

Type Z-9R, RADIO CONTROL
Supplied in all FCC assigned frequencies. Calibrated .005%. Specify frequency desired, make and model of equipment.
Type Z-9R—Radio Control **\$2.95 Net**

VHF Types, AIRCRAFT
For Lear, Narco and similar equipment operating in the 121 Mc. region, requiring crystals in 30 Mc. range.
Type Z-9R—Aircraft **\$4.95 Net**
Type Z-13—Aircraft (Miniature) **4.95 Net**
Type Z-13P—Aircraft (Miniature) **4.95 Net**

Type Z-6A FREQUENCY STANDARD
Correlated in oscillator having load capacity of 32 mmfd. .486" pin spacing; .050" pins.
Type Z-6A—100 Kc. **\$6.95 Net**



Type Z-1, MARS and CAP
Calibrated to .005% with 32 mmfd. crystal load capacity. Official assigned frequencies in the range.
1,600 to 10,000 Kc.
\$3.45 Net

ORDER FROM YOUR JOBBER

PETERSEN RADIO CO., INC.
2800 W. BROADWAY
COUNCIL BLUFFS, IOWA

TELEGRAPHERS' ABBREVIATIONS IN CURRENT USE

⌒ denotes short space, as in American Morse o, e; c, t; &, es.
— denotes letters sent together, as in ar, sent . . .

- A -	
aa	all after
ab	all before
abl	able
abt	about
ads, adr	address
adv	advise
af	Africa
aftrn	afternoon
agn	again
ahd	ahead
alng	along
am	amplitude modulation
ani	any
anr	another
ant	antenna
app	appreciate
ar	end of message
as, as m	wait, wait a minute
au	fractions follow
aw	auf wiedersehn (Ger), see you later

- B -	
b	be
b4	before
balun	balanced-to-unbalanced
bc, bcl	broadcast, broadcast listener
bcnu	be seeing you
bd	buenos dias (Sp), bad
bda	birthday
bee, bo, bth	both, as in "u5 bee", up both (Morse)
bfo	beat frequency oscillator
bjr	bon jour (Fr)
bk, bkg	back, break, black, book, breaking
bkr	breaker, circuit-breaker
bn	been, brown, between, buenas noches (Sp)
bq	answer to rq (request)
brg, brmg	bearing, heading
bsr	bon soir (Fr)
btr	better
buk	book

- C -	
c	yes
cd	card, could
cd, cud, cdnt	could, couldn't
cfm, cfmg	confirm, confirming
ck	check
ckt, cct	circuit
cl, clg	call, calling, closed
clbk	callback
clix	clicks
clr	clear
condx, condx, cdx	conditions
cnt, cnti, cnty	count, county
cnvn	convention
coz, cos, cuz, becuz	because
cop	copy
cq	general call to all stations
cs	call sign, call letters
cua, cuagn	see you again
cul	see you later
cum, cm, cmg	come, coming
cupla	a couple of
cw	continuous wave, manual keying

- D -	
da	day
dbl	double
den	direction
dct	direct
de	from
df	direction finder
diff, diff	difference
dfr, dld	dealer, deliver, delivered
dn, d	down (in frequency)
dnt, dmi	do not, don't mention it
dpe	dope, information
dr	dear
ds	thanks, danke schon (Ger)
dsnt	does not
dsw	goodbye, do svidaniya (Russian)
dunno	don't know
dx	distance, or rare station
dxdn	dx expedition

- E -	
em	old man
eh	?
el, els	antenna element(s)
em	them
eni, enibdi, enihw	any, anybody, anyhow
ere	here
es, es	and (from Morse "&", sent . . .)
eta	estimated time of arrival
etd	estimated time of departure
eu	Europe

- F -	
fb, vfb	fine business, good (enthusiastic approval)
fd	field day, feed, food
fer	for
fiver	QSA-5
fld	field, filed
flr	floor
fm, frm	from, frequency modulation
frd	friend, find, found
fni	funny
foxes	teleprinter test tapes
freq, fq	frequency
fwd	forward
fyi	for your information

- G -	
ga	good afternoon, go ahead
gb	good bye
gd	good day, good
ges, gess	guess
gg	going
gl	good luck

- G - (Cont.)	
gld	glad
gn, gng	gone, green, going
gnd	ground
gotta	got to, have to, must
gp	ground plane, group (word)
grs	groups (as in msg code groups)
gud	good
gtgs	greetings
gv, gvg	give, giving

- H -	
hd, hrd	had, hard, heard
hdg	heading, antenna azimuth
hed	he would
hi	high, laughter, (sometimes !)
hlo	hello
hlv	hasta la vista (Sp), see you later
hpe, hpg	hope, hoping
hpi	happy
hpn, wa hpn	happen, what happened
hq, hqtrs	headquarters
hr, hrg, hrs	here, hear, hour, hearing, here is, hours
hv, hvnt, hvg	have, haven't, having
hvi	heavy
hw, hws	how? how is?

- I -	
i?	ready? here goes the tape
id	I would
ie	clear? (response: i-go, e-wait)
im	I'm, him, intermodulation
imf	?
info	information
irpt	I repeat

- K -	
k	go ahead, end of transmission
ka	beginning of transmission (formal)
klx	clicks
klvb	que (ke) le vaya bien (Sp)
	"That it goes well with you"
kn	go ahead, but only the station(s) called, I will answer no other calls, known
knw	know

- L -	
lkg	looking
ll	landline, telephone or telegraph
lng	long
lotsa	lots of
lp	long path (long way around earth)
lsn	listen
ltr	letter, later
lv, lvg	leave, leaving
lw	long wave, "lone wolf" (independent DXer)

- M -	
mag, rag	magazine
mci, mci bcp	merci, merci beaucoup (Fr), thanks
mgr	manager
mi	my
mil, mill, ma	milliamperes, typewriter
min	minute, minimum
mk	mark (opposite of space)
ml, mlg	mail, mailing
mng	morning, meaning
mni	many
mm	manual
mo	moment
msg	message

- N -	
n	no
nd	nothing doing
ng	no good
nil	nothing
nir	lazy "nil"
nm	nothing more, no more
nn	noon
no	know
nr	near, number
nvr	never
nw	now

- O -	
ob, eeb	old boy
oc	old chap
ok, eek	all correct
ol	old lady
om, eem	old man
op, opr	operator
opn, opg, ma	operation, operating
ot	old timer

- P -	
pa	power amplifier
pbl, pbi	probable, preamble, probably
pctcs	practices
pd	period, paid
pd	pure dc, clean note
pkg	package, parking
plsr	pleasure
ppgn	propagation
ppl	people
prtbl	portable
pse, pls, psd	please, pleased
psbl, psbli	possible, possibly
psn, posn	position
pt, ptd, ptg	point, part, pointed, pointing
pwr	power

- Q -	
qhm	tuning from high frequency to middle of band
qlf	try sending with left foot awhile
qlm	tuning from low frequency to middle of band
qlz	operator too lazy
qmh	tuning from middle frequency to high frequency
qml	tuning from middle frequency to low frequency
qmt	try mailing your tlc
qmn	man-made electrical noise
qsl	mail card confirming qso
qsl	send card after receiving mine
qst	of interest to all amateurs

- R -	
r	received
rac	rectified ac
rc	rag chew
rcd, recd	received
rcr, recr, rcvr, rx	receiver
rd	read (copy), red
rdi, rdy	ready
rdo	radio, radio station
re	concerning
reg, regs	regular, regulations
rito	righto
rm	room
rmg	running
rockbound, rockbnd	crystal controlled, no vfo
rpt	report, repeat
rq	request
rst	readability 1-5, strength 1-9, tone 1-9

- S -	
sa, sez, sed, sa	say, says, said, South America
sae	self-addressed envelope
sase	self-addressed stamped envelope
sb, ssb	single sideband
sgd	signed
shd, shud, shudn't	should, shouldn't
sig, sigs	signal(s), signature
simo	simultaneously
sked	schedule
sl	see you later
sn	soon, seen, signal/noise
sp	short path (the closer great-circle path)
sri	sorry
ss	sweepstakes
ssn	season, as in "ssns gtgs"
stn	station
su	I'll see you
sum	some
sumbdi	somebody
svc	service
svl	several
sw	switch, short wave
sx	dollar sign "\$"

- T -	
tbl, trbl	trouble
tfc	traffic, messages
thr	there, their
tmw	tomorrow
trg	tuning, thing
tsk	think
trmsn	transmission
trnsit, position, there, transmit/receive	transit, position, there, transmit/receive
T/R	transmit/receive
trix	tricks
tt, tts	that, that is
tu, tku, tnx, tks	thank you, thanks
tv, tvi	television, television interference
twx	telegram
tx, trans	transmitter

- U -	
u, up	you, upward in frequency
ufb	vfb, very fine business (Rus)
uk	United Kingdom
ul, ud	you will, you would
undld	undelivered
unhrd	unheard
ur, urs	your, yours
ut	universal time, GMT, "Zebra" time

- V -	
va	signing off (same as sk)
vert	vertical
vfb	very fine business
vfo	variable-frequency oscillator
vjo	viejo (Sp), old man
vox	voice-operated switch
vy, vri	very
vxo	variable crystal oscillator

- W -	
w, wt	watt
wa	word after
wat, watsa	what, what do you say?
wb	word before
wd	word, would
wel	who?
wed	we would
wh	white
wid	with
wilco	will comply, will do
wk, wkg	week, weak, work, working, QSOing
wri	worry
wx, wea	weather

- X -	
xtl	crystal
xtr, xmtr	transmitter
xq	fill, or repeat of unreceived copy

- Y -	
yda	yesterday
yl, xyl	young lady, married young lady
yr	year, your

- Z -	
z	Greenwich Mean Time, UT, "zebra"
zedder	New Zealander
zi	zone of the interior (continental USA)
zilch	nothing

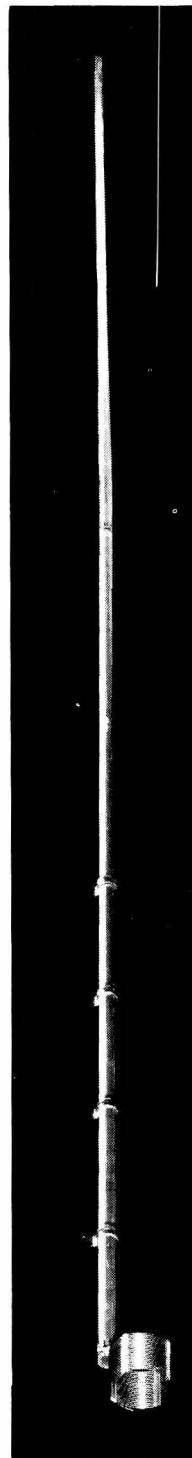
NUMBER CODE:	
1 - a	6 - 6
2 - u	7 - b
3 - v	8 - d
4 - 4	9 - n
5 - e	0 - t

73	
88	best wishes
99 (rare)	love and kisses
	keep out

FEDERAL COMMUNICATIONS COMMISSION EXAMINATION POINTS

Examinations for commercial and amateur radio operator licenses are conducted at the following F.C.C. field offices on the days designated by the Engineer in Charge of each office. Specific dates should be obtained from the Engineer in Charge.

Dist. No.	Office Location
1 -	BOSTON, MASSACHUSETTS 02109 1600 Customhouse
2 -	NEW YORK, NEW YORK 10014 748 Federal Building, 641 Washington Street
3 -	PHILADELPHIA, PENNSYLVANIA 19106 1005 New U. S. Customhouse
4 -	BALTIMORE, MARYLAND 21202 415 U. S. Customhouse, Gay and Water Streets
5 -	NORFOLK, VIRGINIA 23510 405 Federal Building
6 -	ATLANTA, GEORGIA 30303 2010 Atlanta Merchandise Mart, 240 Peachtree St., NE
6S -	SAVANNAH, GEORGIA 31402 238 Post Office Building, Box 77
7 -	MIAMI, FLORIDA 33101 51 S. W. First Av., Room 919
7T -	TAMPA, FLORIDA 33602 759 Federal Office Bldg., 500 Zack Street
8 -	NEW ORLEANS, LOUISIANA 70130 608 Federal Office Building, 600 South Street
8M -	MOBILE, ALABAMA 36602 439 U. S. Court & Customhouse
9 -	HOUSTON, TEXAS 77002 5636 New Federal Office Building, 515 Rusk Avenue
9B -	BEAUMONT, TEXAS 77704 301 Post Office Building, 300 Willow Street
10 -	DALLAS, TEXAS 75202 1314 Wood Street, Room 707
11 -	LOS ANGELES, CALIFORNIA 90014 Room 50 Mezzanine Floor, 849 South Broadway
11SD -	SAN DIEGO, CALIFORNIA 92101 Fox Theatre Building, 1245 Seventh Avenue
12 -	SAN FRANCISCO, CALIFORNIA 94126 323A Customhouse, 555 Battery Street
13 -	PORTLAND, OREGON 97205 441 New U. S. Courthouse, 620 S. W. Main Street
14 -	SEATTLE, WASHINGTON 98104 806 Federal Office Building, 1st Avenue and Marion St.
15 -	DENVER, COLORADO 80202 521 New Customhouse, 19th bet. California and Stout St.
16 -	ST. PAUL, MINNESOTA 55102 208 Federal Courts Building, 6th and Market Streets
17 -	KANSAS CITY, MISSOURI 64106 3100 Federal Office Building, 911 Walnut Street
18 -	CHICAGO, ILLINOIS 60604 1872 U.S. Courthouse, 219 S Dearborn St.
19 -	DETROIT, MICHIGAN 48226 1029 Federal Building
20 -	BUFFALO, NEW YORK 14203 328 Post Office Building, Ellicott and Swan Streets
21 -	HONOLULU, HAWAII 96808 502 Federal Building, 335 South King Street
22 -	SAN JUAN, PUERTO RICO 00903 322-323 U.S. Post Office & Courthouse
23 -	ANCHORAGE, ALASKA 99501 55 U. S. Post Office Building, Box 644
24 -	WASHINGTON, D.C. 20555 1101 Pennsylvania Avenue N.W., Room 10110



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Name _____
Address _____
City _____ Zone _____ State _____

Z-CODE FOR POINT-TO-POINT SERVICE

Asterisk indicates U. S. Military Usage

NOTE: Numbers 1-5 following the "Z" signal mean:

1. Very slight
2. Slight
3. Moderate
4. Severe
5. Extreme

- A -

*ZAA YOU ARE NOT OBSERVING CIRCUIT DISCIPLINE.
 *ZAB YOUR SPEED KEY IMPROPERLY ADJUSTED.
 *ZAC Advise (Call sign of) frequency you are reading.
 *ZAD Cease using speed key.
 *ZAE Signal (1) Not understood (2) Not held.
 *ZAF Unable to receive you, try via _____.
 *ZAG Reroute the circuit by patching.
 *ZAH Unable to relay. We file.
 *ZAI Run (foxes, RY's, mks, etc.)
 *ZAJ Have been unable to break you.
 *ZAL Alter your wave-length.
 *ZAM Closing down, due to _____.
 *ZAN WE CAN RECEIVE ABSOLUTELY NOTHING.
 *ZAO Transmit only msgs of above precedence
 *ZAP CAN'T UNDERSTAND VOICE. USE TELEGRAPH.
 *ZAR ACKNOWLEDGE, PLEASE.
 *ZAS Work (simplex, duplex, mux, sb).
 *ZAT Last word received (sent) was _____.
 *ZAZ Revert to Automatic Relay.
 *ZBA Rerun tapes run on _____ since _____.
 *ZBB Punching tape for transmission.
 *ZBC Send blind until advised.
 *ZBD Send on (kcs). Will confirm later.
 *ZBE You are causing interference.

- B -

*ZBA Cause of delay is _____.
 *ZBD Following was sent (time).
 *ZBE Retransmit message _____ to _____.
 *ZBG You are sending upper case.
 *ZBH Make call before transmitting traffic.
 *ZBI Listen for telephony.
 *ZBL Do not use break-in.
 *ZBM Put _____ (speed opr.) this frequency.
 *ZBN Break and go ahead with New slip.
 *ZBO Your tape-reversed.
 *ZBP I HAVE TRAFFIC.
 *ZBQ (1) Characters indistinct (2) Spacing bad.
 *ZBR When & on what frequency was message received.
 *ZBS Break circuit. Retuning.
 *ZBT Shall I send by (method).
 *ZBU Blurring Signals (1) Dots heavy (2) Dots light.
 *ZBV Count _____ as _____ groups.
 *ZBW Report when in communication with _____.
 *ZBX Answer on _____ mc.
 *ZBY I shift (or ask _____) to (kcs).
 Pull Back your tape one Yard.

- C -

*ZCA Circuit Affected. Make readable signals.
 *ZCB Circuit Broken. Signal unheard.
 *ZCC Collate Code.
 *ZCD Your Collation is Different.
 *ZCF CHECK YOUR CENTER FREQUENCY, PLEASE.
 *ZCI Circuit Interrupted. Running & available.
 *ZCK Check Keying.
 *ZCL TRANSMIT CALL LETTERS INTELLIGIBLY.
 *ZCO Your Collation Omitted.
 *ZCP Conditions Poor, increase to maximum.
 *ZCR Using concentrator. Make warning signals.
 *ZCS Cease Sending.
 *ZCT Send Code Twice.
 *ZCW Are you in direct Communication With _____?

- D -

*ZDA Hr. formal message, priority _____.
 *ZDB Expedite reply to my _____.
 *ZDC Diagnosing Circuit faults, will advise.
 *ZDE Message undelivered. (1) Will keep trying
 (2) Advise disposal (3) Cancelling (4) Btr. ads.
 *ZDE Message _____ undelivered.
 *ZDF Frequency is Drifting to degree indicated, 1-5.
 *ZDF Message _____ received by addressee (time).
 *ZDG Accuracy of following doubtful.
 *ZDH Your Dots are too Heavy (long).
 *ZDL Your Dots are too Light (short).
 *ZDM Your Dots Missing.
 *ZDM This is a multiple-address message.
 *ZDN Report disposal of message _____.
 *ZDQ Message _____ relayed to _____ at _____ by _____.
 *ZDS Msg just trans erroneous. Correct version is _____.
 *ZDT Following Transmitters running Dual.
 *ZDT Don't Transmit exercise messages until advised.
 *ZDV Your Dots Varying length, please remedy.
 *ZDV Private message received for _____. Advise.
 *ZDY No private messages until ordered.

- E -

*ZEC Have you received message _____?
 *ZED Experiencing Drop-outs, 1-5.
 *ZEF We are Experiencing Fill-ins, 1-5.
 *ZEG We are Experiencing Garbles, 1-5.
 *ZEI Accuracy of heading doubtful.
 *ZEK No answer required.
 *ZEL This message is correction to _____.
 *ZEN This message is classified.
 *ZEP Parts marked ZEP coming later.
 *ZEU Exercise (drill message).

- F -

*ZFA Failing Auto.
 *ZFA Message intercepted or copied blind.
 *ZFB SIGNALS ARE FADING BADLY.
 *ZFB Pass this message to _____.
 *ZFC Check your FSK shift, please.
 *ZFD Depth of Fading is as indicated, 1-5.
 *ZFD This message is a suspected duplicate.
 *ZFF Advise when message received by _____.
 *ZFH Message for (1) Action, (2) Info, (3) Comment.
 *ZFI Reply to message? There is no reply.
 *ZFK Revert to FSK.
 *ZFO SIGNALS FADED OUT.
 *ZFO Frequency shift your signal is _____ cps.
 *ZFR Rapidity of Fading is as indicated, 1-5.
 *ZFR Cancel transmission _____.
 *ZFS Signals are Fading Slightly.

- G -

*ZGB Send (Answer).
 *ZGF _____ signals Good For _____ wpm.
 *ZGF Make call signs more distinctly.
 *ZGP Please Give Priority.
 *ZGS YOUR SIGNALS GETTING STRONGER.
 *ZGW YOUR SIGNALS GETTING WEAKER.

- H -

*ZHA How are conditions for Auto reception?
 *ZHC HOW ARE YOUR RECEIVING CONDITIONS?
 *ZHM/x Harmonic radiation from transmitter.
 *ZHS Send High Speed auto _____ wpm.
 *ZHY We are Holding Your _____.

- I -

*ZIM Industrial or Medical interference, 1-5.
 *ZIP Increase Power.
 *ZIR You have strong Idle Radiation.
 *ZIS Atmospheric Interference, 1-5.

- J -

*ZJF Frequency Jumping to degree indicated, 1-5.

- K -

*ZKA Who is controlling station? or I am _____.
 *ZKB Permission necessary before transmitting msgs.
 *ZKD Take control of net _____ or shall I _____.
 *ZKE I (or _____) reports into circuit (net).
 *ZKF Station leaves net temporarily.
 *ZKJ Closing down (until _____).
 *ZKO REVERT TO ON/OFF KEYING.
 *ZKK Say when ready to resume.
 *ZKW What Stations Keeping watch on _____?
 Keying Weight is _____ (percent).

- L -

*ZLB Give Long Breaks, please.
 *ZLD We are getting Long Dash from you.
 *ZLL Distorted LandLine control signals.
 *ZLP Low (minimum) Power.
 *ZLS WE ARE SUFFERING FROM LIGHTNING STORM.

- M -

*ZMG Magnetic activity.
 *ZMO STAND BY MOMENT.
 *ZMP MisPunch or Perforator failures.
 *ZMQ Stand by for _____.
 *ZMU/x Multipath making _____ mark bias.

- N -

*ZNB No Breaks, we send twice.
 *ZNB Authentication is _____.
 *ZNC NO COMMUNICATIONS WITH _____.
 *ZNC All stations authenticate.
 *ZND You are misusing authenticator.
 *ZNG Receiving conditions No Good for code.
 *ZNI NO CALL LETTERS (IDENTIFICATION) HEARD.
 *ZNN ALL CLEAR OF TRAFFIC.
 *ZNO Not On the air.
 *ZNR Not Received.
 *ZNS Here New Slip.

- O -

*ZOA Have checked (call-letters) _____ OK.
 *ZOC Relay to your sub-stations.
 *ZOD Observing _____ will transfer when better.
 *ZOD Act as radio link between me and _____.
 *ZOE Can you accept message? (or) Give me message.
 *ZOF Relay this message.
 *ZOG Transmit your message (give info.).
 *ZOH What traffic have you On Hand?
 *ZOK WE ARE RECEIVING OK.
 *ZOK Relay this message via _____.
 *ZOL OK. On Line.
 *ZOM Mail delivery permissible.
 *ZOR Transmit Only Reversals.
 *ZOU Give instructions for routing traffic.
 *ZOO Obtain retransmission of message _____.
 *ZOP - P -

- P -

*ZPA Printer line Advance not received.
 *ZPA Your speech distorted.
 *ZPC Printer Carriage-return not received.
 *ZPC Signals fading, 1-5.
 *ZPE Punch Everything.
 *ZPF Printer motor Fast.
 *ZPO Send Plain Once.
 *ZPP Punch Plain only.
 *ZPR Rerun slip at Present Running.
 *ZPS Printer motor Slow.
 *ZPT Send Plain Twice.

- R -

*ZRA Reverse Auto tape.
 *ZRA Mr frequency OK? Your frequency is _____.
 *ZRB Relayed signal Bad, adjust receiver.
 *ZRB Check your frequency on this circuit.
 *ZRC Can you Receive Code?
 *ZRC Shall I, or tune your transmitter to _____.
 *ZRE Hear you best on (kcs).
 *ZRF Send tuning signals on present frequency.
 *ZRK Reversed Keying.
 *ZRL Rerun slip before one now running.
 *ZRM Please Remove Modulation from _____.
 *ZRM I receive (usb, lsb, isb's)
 *ZRN ROUGH NOTE.
 *ZRO ARE YOU RECEIVING OK?
 *ZRR Run Reversals.
 *ZRS Rerun message No. _____.
 *ZRT Revert to Traffic.
 *ZRY Run test slip, please.

- S -

*ZSF SEND FASTER.
 *ZSH STATIC HEAVY HERE.
 *ZSI/x Please furnish Signal Intensity.
 *ZSM/x Microvolt input to receiver is _____.
 *ZSN Give SINPO report on _____ S Signal strength.
 I Interference.
 N Noise.
 P Propagation.
 O Overall readability.

*ZSO Transmit Slips Once.
 *ZSR YOUR SIGNALS STRONG & READABLE.
 *ZSS Send Slower.
 *ZST Transmit Slips Twice.
 *ZSU YOUR SIGNALS ARE UNREADABLE.
 *ZSV Your Speed Varying.

- T -

*ZTA Transmit by Auto.
 *ZTH Transmit by Hand.
 *ZTI Transmission temporarily Interrupted.

- U -

*ZUA Conditions Unsuitable for Automatic recording.
 *ZUA Timing signal will be transmitted.
 *ZUB WE HAVE BEEN UNABLE TO BREAK YOU.
 *ZUC UNABLE TO COMPLY. WILL DO SO AT _____.
 *ZUE Affirmative (Yes).
 *ZUG Negative (No).
 *ZUH Unable to comply.
 *ZUJ Wait. Stand by.

- V -

*ZVB Varying Bias.
 *ZVF Signals Varying in Frequency.
 *ZVP Send V's Please.
 *ZVR Pass at once to sub-stations.
 *ZVS Signals Varying in intensity.

- W -

*ZWB Name of operator on watch.
 *ZWC Wipers or Clicks here.
 *ZWO SEND WORDS ONCE.
 *ZWR YOUR SIGNALS WEAK BUT READABLE.
 *ZWS Wavelength (frequency) is Swinging, 1-5.
 *ZWT SEND WORDS TWICE.

- Y -

*ZYS WHAT IS YOUR SPEED OF TRANSMISSION?

- Z -

*ZZF Incorrect.
 *ZZG You are correct.
 *ZZH TRY AGAIN.

MULTIPLEX

*ZYA Cease traffic; send A's on A channel.
 *ZYC Cycling on ARQ, errors stored your end.
 *ZYK Check Your Keying on channel _____.
 *ZYM Change from single printer to Multiplex.
 *ZYN Make bias Neutral.
 *ZYP Change from multiplex to single Printer.
 *ZYR Please put _____ on MUX revolutions.
 *ZYT Check Your Thyratrons.
 *ZYX/x Revert to MUX frames _____ channels.

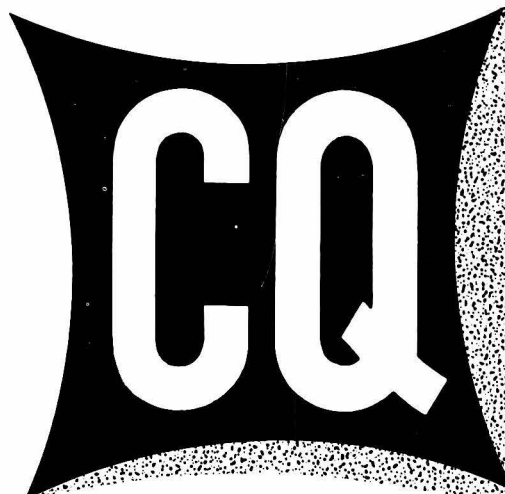
RADIOGRAPH AND FACSIMILE

*ZXA Adjust to receive speeds _____.
 *ZXC Pix _____ Conditionally accepted.
 *ZXD Send Dashes, please.
 *ZXF You are Floating Fast.
 *ZXH Limits High, reduce _____ cycles.
 *ZXJ You are Jumping out of phase.
 *ZXX Is your synchronizing correct?
 *ZXL Limits are Low, increase _____ cycles.
 *ZXO Last run defaced due to _____.
 *ZXP Go ahead with Pix.
 *ZXS You are floating Slow.
 *ZXV Your modulation is Varying.

Sources: Cable and Wireless Ltd.
 U. S. Army Communications Manual SIG 439-2.
 ACP-131 (A), Allied Comms. Procedures.
 W3AFM

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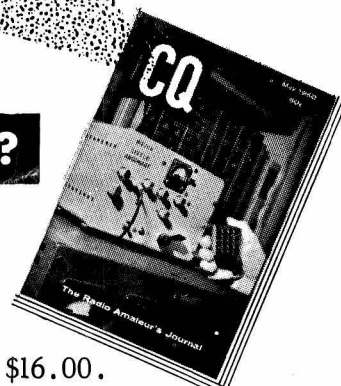
FOR AMATEURS

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DX OPERATING CODE

(For W/VE Amateurs)

Some amateur DXers have caused considerable confusion and QRM in their efforts to work DX stations. The points below, if observed by all W/VE amateurs, will help make DX more enjoyable for all.

1. Call DX only after he calls CQ, QRZ? or signs SK, or 'phone equivalents thereof. Make your calls short.
2. Do not call a DX station:
 - a. On the frequency of the station he is calling until you are sure the QSO is over (SK).
 - b. Because you hear someone else calling him.
 - c. When he signs KN, AR or CL.
 - d. Exactly on his frequency.
 - e. After he calls a directional CQ, unless of course you are in the right direction or area.
3. Keep within frequency band limits. Some DX stations can get away with working outside, but you cannot.
4. Observe calling instructions given by DX stations.
 Example: "15U" means "call 15 kc. up from my frequency".
 "15D" means down, etc.
5. Give honest reports. Many DX stations depend on W/VE reports for adjustment of station and equipment.
6. Keep your signal clean. Key clicks, ripple, feedback or splatter give you a bad reputation and may get you a citation from FCC.
7. Listen and call the station you want. Calling CQ DX is not the best assurance that the rare DX will reply.
8. When there are several W or VE stations waiting, avoid asking DX to "listen for a friend". Also avoid engaging him in a rag chew against his wishes.

(For Overseas Amateurs)

To all overseas amateur stations:

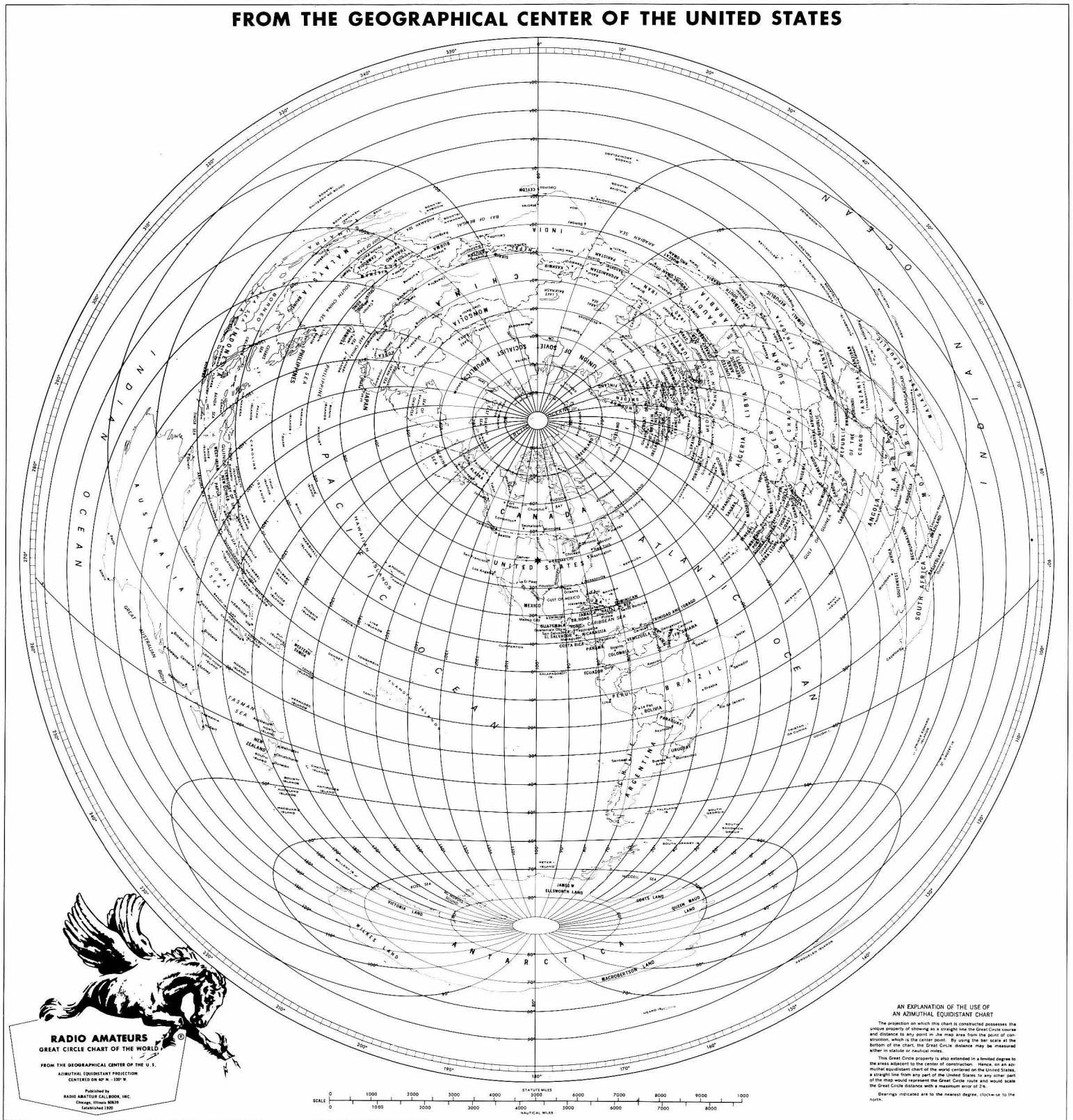
In their eagerness to work you, many W and VE amateurs resort to practices which cause confusion and QRM. Most of this is good-intentioned but ill-advised; some of it is intentional and selfish. The key to the cessation of unethical DX operating practices is in your hands. We believe that your adoption of certain operating habits will increase your enjoyment of amateur radio and that of amateurs on this side who are eager to work you. We recommend your adoption of the following principles:

1. Do not answer calls on your own frequency.
2. Answer calls from W/VE stations only when their signals are of good quality.
3. Refuse to answer calls from other stations when you are already in contact with someone, and do not acknowledge calls from amateurs who indicate they wish to be "next".
4. Give everybody a break. When many W/VE amateurs are patiently and quietly waiting to work you, avoid complying with requests to "listen for a friend".
5. Tell listeners where to call you by indicating how many kilocycles up (U) or down (D) from your frequency you are listening. Examples: c.w. - "CQ DX CQ DX CQ DX 15U DE AC4YN AC4YN AC4YN 15U K"; 'phone - "Answer 15 kilocycles up from my frequency".
6. Use the ARRL-recommended ending signals, especially KN, to indicate to impatient listeners the status of the QSO. (KN means "Go ahead (specific station), all others keep out".
7. Let it be known that you avoid working amateurs who are constant violators of the above principles.

ARRL Communications Department

RADIO AMATEURS GREAT CIRCLE CHART OF THE WORLD

FROM THE GEOGRAPHICAL CENTER OF THE UNITED STATES



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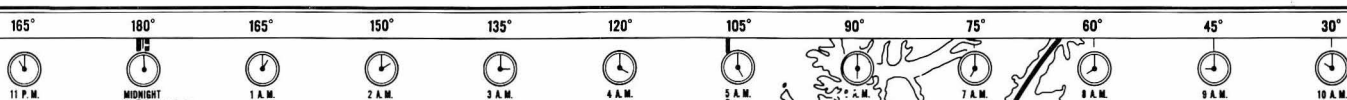
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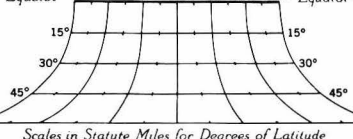
The table below shows the great circle bearing in degrees from the point indicated above to countries throughout the world having licensed radio amateurs. Where cities are shown the bearing to the nearest degree is given. These bearings were compiled from information supplied by the U. S. Coast and Geodetic Survey.

PREFIX	COUNTRY	BEARING	PREFIX	COUNTRY	BEARING	PREFIX	COUNTRY	BEARING
AC3	SIKKIM	353	KV4	VIRGIN IS.	117	VQ1	ZANZIBAR	60
AC4	TIBET, LHASA	351	KW6	WAKE IS.	288	VQ8	CHAGOS IS.	17
AC5	BHUTAN	351	KX6	MARSHALL IS.	280		MAURITIUS & RODRIGUEZ IS.	53
AP	PAKISTAN, KARACHI	14	KZ5	CANAL ZONE	145	VQ9	SEYCHELLES IS.	40
BV	TAIWAN, TAIPEI	323	LA	NORWAY, OSLO	32	VR1	GILBERT, ELLICE & OCEAN IS.	270
BY	CHINA, CHUNGKING	337		SWALBARD IS.	13	VR2	FIJI IS.	252
	PEKING	334	LA	JAN MAYEN IS.	24	VR3	FANNING & LINE IS.	253
	SHANGHAI	326	LU	ARGENTINA, BUENOS AIRES	148	VR4	SOLOMON IS.	270
CE	CHILE, SANTIAGO	156	LX	LUXEMBOURG	42	VR5	TONGA IS.	245
CE0A	EASTER IS.	190	LZ	BULGARIA, SOFIA	39	VR6	PITCAIRN IS.	210
CE0Z	JUAN FERNANDEZ IS.	163	MP4	MUSCAT & OMAN, MASQAT	23	VS5	BRUNEI	317
CM,CO	CUBA, HAVANA	136	OA	PERU, LIMA	154	VS6	HONG KONG	328
CN	MOROCCO, CASABLANCA	62	OD5	LEBANON, BEIRUT	37	VS9	ADEN, ADEN	41
CP	BOLIVIA, LA PAZ	147	OE	AUSTRIA, VIENNA	39	VU	INDIA, BOMBAY	9
CR3,5	PORTUGUESE GUINEA	85	OH	FINLAND, HELSINKI	26		CALCUTTA	353
CR4	CAPE VERDE IS.	87	DH0	ALAND IS.	28		NEW DELHI	4
CR6	ANGOLA, NOVA LISBOA	84	OK	CZECHOSLOVAKIA, PRAGUE	38	VU4	LACCADIVE IS.	10
CR7	MOZAMBIQUE, LOURENCO MARQUES	86	ON	BELGIUM, BRUSSELS	42	VU5	ANDAMAN & NICOBAR IS.	346
	MOZAMBIQUE	67	OX	GREENLAND, GODTHAAB	32	XE	MEXICO, MEXICO CITY	182
		296	OY	FAEROES IS.	35	XE4	REVILLAGIGEDO IS.	211
CR8	TIMOR IS.	328	OZ	DENMARK, COPENHAGEN	34	XW8	LAOS	338
CR9	MACAO	59	PA,PI	NETHERLANDS, AMSTERDAM	40	XZ	BURMA, RANGOON	343
CT1	PORTUGAL, LISBON	67	PJ	NETHERLANDS ANTILLES	128	YA	AFGHANISTAN, KANDAHAR	14
CT2	AZORES IS.	68	PJ2M	SINT MAARTEN	115	YI	IRAQ, BAGHDAD	31
CT3	MADEIRA IS.	146	PX1	ANDORRA	50	YJ	NEW HEBRIDES, VILLA	261
CX	URUGUAY, MONTEVIDEO	41	PY	BRAZIL, BRASILIA	129	YK	SYRIA	34
DJ,DL	WEST GERMAN FEDERAL REP, BONN	37		RIO DE JANEIRO	130	YN	NICARAGUA, MANAGUA	155
DM	E. GERMAN DEMOCRATIC REP, BERLIN	317		NATAL	112	YO	ROMANIA, BUCHAREST	36
DU	PHILIPPINE IS, MANILA	55	PY0	TRINDADE & MARTIN VAZ IS.	118	YS	EL SALVADOR, SAN SALVADOR	160
EA	SPAIN, MADRID	53	PZ	SURINAM	119	YT,YU	YUGOSLAVIA, BELGRADE	39
EA6	BALEARIC IS.	70	SM,SL	SWEDEN, STOCKHOLM	29	YV	VENEZUELA, CARACAS	127
EA8	CANARY IS.	70	SP	POLAND, WARSAW	34	ZA	ALBANIA, TIRANA	42
EA9	SPANISH SAHARA	75	ST	SUDAN, KHARTOUM	50	ZB2	GIBRALTAR	59
EA0	RIO MUNI	43	SU	EGYPT, CAIRO	42	ZC4	CYPRUS	38
EI	IRELAND, DUBLIN	87	SV	GREECE, ATHENS	42	ZD3	GAMBIA	85
EL	LIBERIA, MONROVIA	24	SV5	DODECANESE IS.	41	ZD7	SAINT HELENA	101
EP,EQ	IRAN, TEHRAN	49	TA,TC	TURKEY, ANKARA	35	ZD8	ASCENSION IS.	100
ET3	ETHIOPIA, ADDIS ABABA	44	TF	ICELAND, REYKJAVIK	34	ZD9	TRISTAN DA CUNHA & GOUGH IS.	122
F	FRANCE, PARIS	58	TG	GUATEMALA, GUATEMALA CITY	162	ZE	SOUTHERN RHODESIA, SALISBURY	78
F8E	AMSTERDAM AND ST. PAUL IS.	143	TI	COSTA RICA	153	ZK1	COOK IS.	235
	KERGUELEN IS.	47	TJ8	CAMEROUN, YAOUNDE	74	ZK2	NIUE IS.	244
FC	CORSICA	116	TL8	CENTRAL AFRICAN REP, BANGUI	68	ZL1	NEW ZEALAND, AUCKLAND	238
FG7	GUADELOUPE	61	TN8	REPUBLIC OF CONGO, BRAZZAVILLE	78	ZL2	WELLINGTON	235
FH8	COMORO IS.	255	TR8	GABON, LIBREVILLE	78	ZL3	CHRISTCHURCH	233
FK8	NEW CALEDONIA, NOUMEA	43	TT8	CHAD, FT. LAMY	65	ZL4	DUNEDIN	232
FL8	FRENCH SOMALILAND, DJIBOUTI	117	TU2	IVORY COAST, ABIDJAN	83	ZP	PARAGUAY, ASUNCION	142
FM7	MARTINIQUE	230	TZ	MALI REPUBLIC, BAMAKO	80	ZS	SOUTH AFRICA, CAPE TOWN	104
F08	FRENCH POLYNESIA, TAHITI	201	UA1	SOVIET UNION, MOSCOW	23	ZS	DURBAN	92
F08	CLIPPERTON IS.	63	UA9,0	ASIATIC RUSSIAN S.F.S.R.	346	ZS	JOHANNESBURG	90
FP8	ST. PIERRE & MIQUELON IS.	58	UB5	UKRAINE	30	ZS2	PRINCE EDWARD & MARION IS.	117
FR7	REUNION IS.	115	UC2	WHITE RUSSIAN S.S.R.	30	ZS3	SOUTH-WEST AFRICA, WINDHOEK	93
FS7	SAINT MARTIN IS.	258	UD6	AZERBAIJAN	26	ZS7,ZD5	SWAZILAND	88
FU8	NEW HEBRIDES, VILA	252	UF6	GEORGIA	26	ZS8	BASUTOLAND	94
FW8	WALLIS & FUTUNA IS.	118	UG6	ARMENIA	27	ZS9	BECHUANALAND, MAFEKING	91
FY7	FRENCH GUIANA, CAYENNE	43	UH8	TURKMEN	18	3A2	MONACO	47
G	ENGLAND, LONDON	46	UI8	UZBEK	11	3V8	TUNISIA, TUNIS	50
GC	CHANNEL IS.	42	UJ8	TADZHIK	10	3W8	VIETNAM, SAIGON	329
GD	ISLE OF MAN	42	UL7	KAZAKH	13	4S7	CEYLON, COLOMBO	2
GI	NORTHERN IRELAND, BELFAST	40	UM8	KIRGHIZ	5	4W1	YEMEN	40
GM	SCOTLAND, GLASGOW	44	UN1	KARELO-FINNISH REPUBLIC	19	4X4	ISRAEL	38
GW	WALES	38	UO5	MOLDAVIA	33	5A	LIBYA, TRIPOLI	52
HA	HUNGARY, BUDAPEST	44	UP	LITHUANIA	30	5H3	TANGANYIKA, DAR ES SALAAM	60
HB	SWITZERLAND, BERN	43	UQ	LATVIA	29	5N2	NIGERIA, LAGOS	77
HB0	LIECHTENSTEIN	150	UR	ESTONIA	27	5R8	MALAGASY REPUBLIC, TANANARIVE	64
HC	ECUADOR, QUITO	166	VE1	CANADA, HALIFAX	65	5T5	MAURITANIA, NOUAKCHOTT	80
HC8	GALAPAGOS IS.	126	VE2	MONTREAL	69	5U7	NIGER, NIAMEY	73
HH	HAITI, PORT-AU-PRINCE	122	VE3	TORONTO	5	5V4,5V8	TOGO	79
HI	DOMINICAN REP, SANTO DOMINGO	141	VE4	WINNIPEG	5	5W1	WESTERN SAMOA	249
HK	COLOMBIA, BOGOTA	146	VE5	SASKATOON	338	5X5	UGANDA	60
HK0	SAN ANDRES & PROVIDENCIA IS.	325	VE6	EDMONTON	329	5Z4	KENYA, NAIROBI	58
HM,HL9	KOREA, SEOUL	146	VE7	VANCOUVER	307	60	SOMALI REPUBLIC, MOGADISHU	47
HP	PANAMA	156	VE8	FORT NELSON	329	6W8	SENEGAL, DAKAR	84
HR	HONDURAS, TEGUCIGALPA	338	VK1	AUSTRALIA, CANBERRA	252	6Y5	JAMAICA	133
HS	THAILAND, BANGKOK	45	VK2	SYDNEY	253	7G1	REPUBLIC OF GUINEA, CONAKRY	86
HV	VATICAN CITY	45	VK3	MELBOURNE	251	7Q7	MALAWI, ZOMBA	72
I	ITALY, ROME	42	VK4	BRISBANE	258	7X2	ALGERIA, ALGIERS	54
	TRIESTE	49	VK5	ADELAIDE	257	7Z,HZ	SAUDI ARABIA, MECCA	40
IS	SARDINIA	48	VK6	PERTH	275	8F1,2,3	JAVA	319
IT	SICILY	316	VK7	TASMANIA, HOBART	244	8F4	SUMATRA	326
JA	JAPAN, TOKYO	343	VK8	DARWIN	288	8F5	BORNEO	312
JT1	MONGOLIA, ULAN BATOR	38	VK9	NORFOLK IS.	249	8F6	CELEBES & MOLUCCA IS.	307
JY	JORDAN	289	VK0	NEW GUINEA, PAPUA, PORT MORESBY	278	9A1,M1	SAN MARINO	44
JZ0	WEST IRIAN	262	VK0	HEARD IS.	161	9G1	GHANA, ACCRA	80
KB6	BAKER IS.	130	V01	MACQUARIE IS.	226	9J2	ZAMBIA, LUSAKA	78
KC4	NAVASSA IS.	294	V02	NEWFOUNDLAND, ST JOHNS	61	9K2	KUWAIT	30
KC6	CAROLINE IS.	128	VP1	LABRADOR, HOPEDALE	45	9L1	SIERRA LEONE, FREETOWN	86
KG4	GUANTANAMO BAY, CUBA	298	VP2	BRITISH HONDURAS	155	9M1,ZB1	MALTA	49
KG6	MARIANAS IS, GUAM	308	VP3	ANTIGUA	115	9M2	FEDERATION OF MALAYSIA	333
KG6I	VOLCANO IS.	298	VP4	BRITISH GUIANA, GEORGETOWN	121	9M4	SINGAPORE	328
KG6S	SAIPAN IS.	268	VP5	TRINIDAD & TOBAGO IS.	121	9M6	SABAH	315
KH6	HAWAII, HONOLULU	322	VP6	TURKS & CAICOS IS.	120	9M8	SARAWAK	320
KL7	ALASKA, ANCHORAGE	328	VP7	BARBADOS	117	9N1	NEPAL, KATMANDU	356
	FAIRBANKS	286	VP8	BAHAMA IS.	123	9Q5	REP. OF THE CONGO, LEOPOLDVILLE	78
KM6	MIDWAY IS.	119	VP8	FALKLAND IS.	156		ELISABETHVILLE	75
KP4	PUERTO RICO	319	VP8	SOUTH GEORGIA IS.	147		STANLEYVILLE	66
KR6,8	RYUKYU IS, OKINAWA	146	VP9	SOUTH ORKNEY IS.	155	9U5	BURUNDI	65
KS4	SWAN IS.	248		BERMUDA IS.	95	9X5	RWANDA	65
KS6	U S SAMOA							

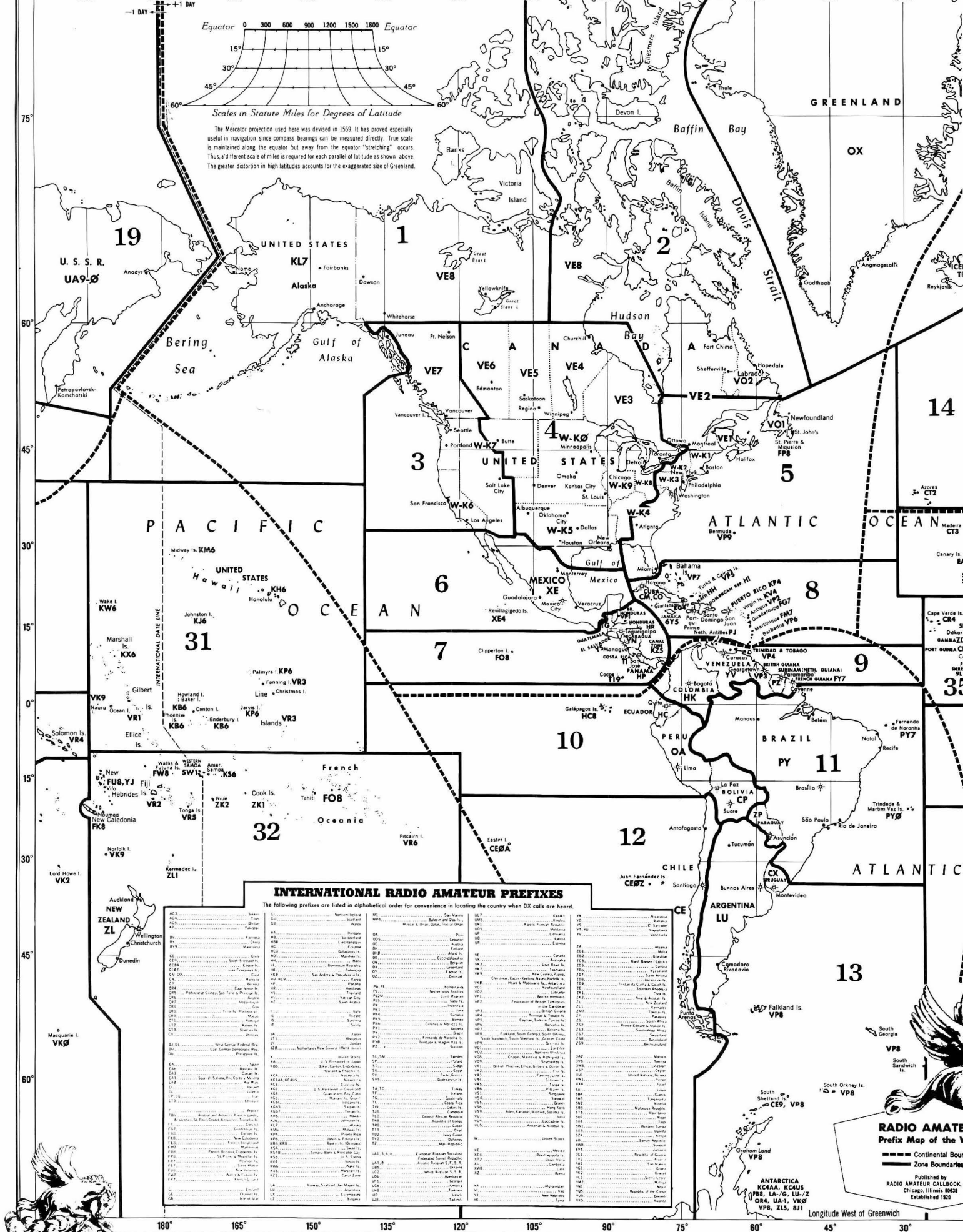
RADIO AMATEURS PREFIX



Equator 0 300 600 900 1200 1500 1800 Equator



Scales in Statute Miles for Degrees of Latitude
The Mercator projection used here was devised in 1569. It has proved especially useful in navigation since compass bearings can be measured directly. True scale is maintained along the equator but away from the equator "stretching" occurs. Thus, a different scale of miles is required for each parallel of latitude as shown above. The greater distortion in high latitudes accounts for the exaggerated size of Greenland.

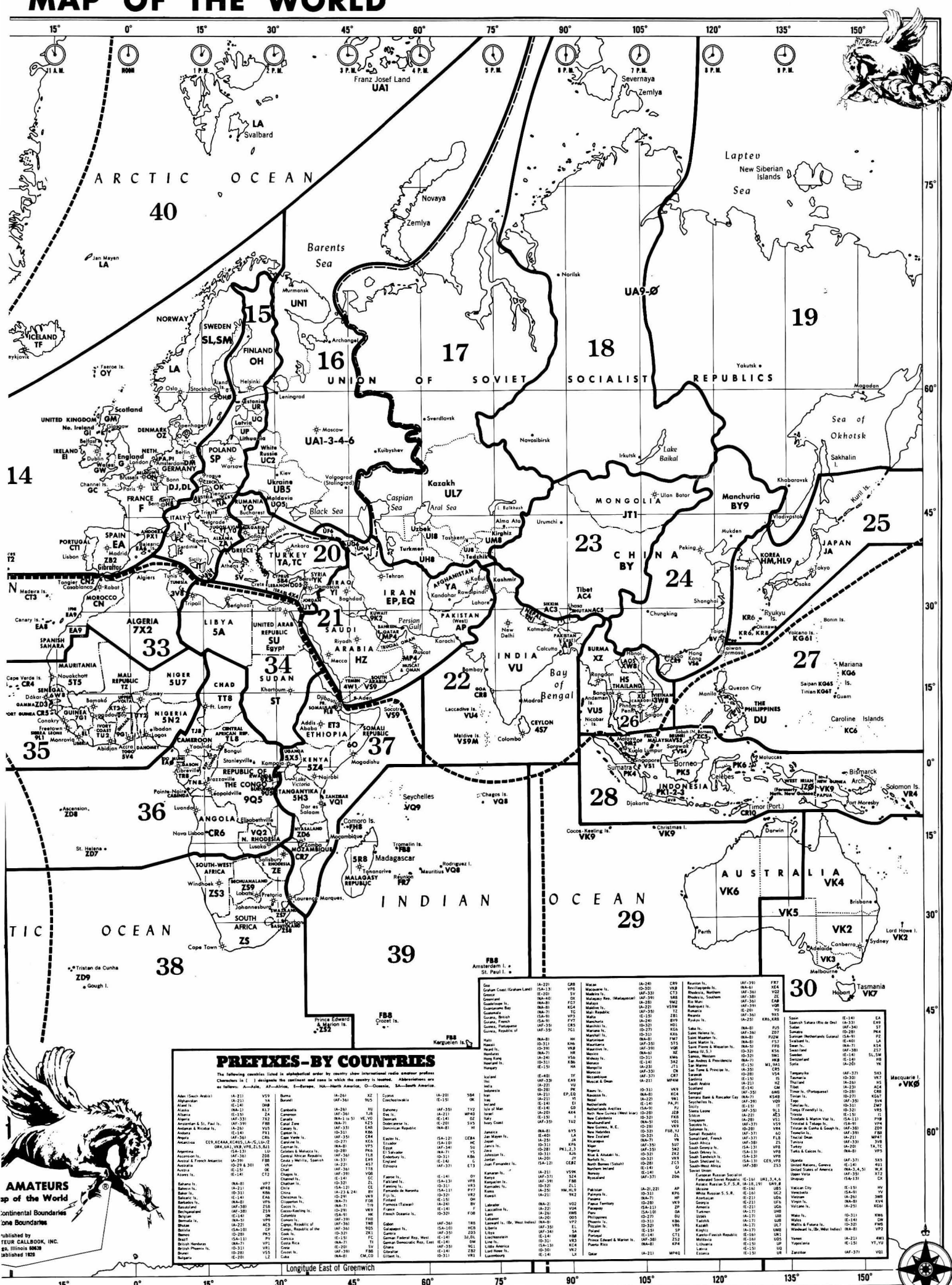


INTERNATIONAL RADIO AMATEUR PREFIXES

The following prefixes are listed in alphabetical order for convenience in locating the country from DX calls are heard.

AA	Aruba	AI	Anguilla	AK	Alaska	AL	Alabama	AM	Antigua	AN	Aruba	AO	Angola	AP	Apia	AR	Argentina	AS	Asuncion	AT	Antigua	AW	Aruba	AX	Alaska	AY	Aruba	AZ	Alaska
BA	Bahamas	BB	Barbados	BC	Belize	BD	Bahamas	BE	Belgium	BF	Burkina Faso	BH	Bahrain	BI	Burundi	BJ	Benin	BK	Bahamas	BL	Belize	BM	Bermuda	BN	Brunei	BO	Bolivia	BP	Bahamas
CA	Canada	CB	Cuba	CC	Cape Verde	CD	Congo	CE	Chad	CF	Central America	CG	Congo	CH	Chile	CI	Cote d'Ivoire	CJ	Canada	CK	Cuba	CL	Chile	CM	Cameroon	CO	Colombia	CP	Costa Rica
DA	Dominican Republic	DB	Dominican Republic	DC	Dominican Republic	DD	Dominican Republic	DE	Germany	DF	Dominican Republic	DG	Dominican Republic	DH	Dominican Republic	DI	Dominican Republic	DJ	Dominican Republic	DK	Dominican Republic	DL	Dominican Republic	DM	Dominican Republic	DN	Dominican Republic	DO	Dominican Republic
EA	Spain	EB	Spain	EC	Ecuador	ED	Ecuador	EE	Ecuador	EF	Ecuador	EG	Ecuador	EH	Ecuador	EI	Ecuador	EJ	Ecuador	EK	Ecuador	EL	Ecuador	EM	Ecuador	EN	Ecuador	EO	Ecuador
FA	Fiji	FB	Fiji	FC	Fiji	FD	Fiji	FE	Fiji	FF	Fiji	FG	Fiji	FH	Fiji	FI	Fiji	FJ	Fiji	FK	Fiji	FL	Fiji	FM	Fiji	FN	Fiji	FO	Fiji
GA	Guatemala	GB	Guatemala	GC	Guatemala	GD	Guatemala	GE	Guatemala	GF	Guatemala	GG	Guatemala	GH	Guatemala	GI	Guatemala	GJ	Guatemala	GK	Guatemala	GL	Guatemala	GM	Guatemala	GN	Guatemala	GO	Guatemala
HA	Haiti	HB	Haiti	HC	Haiti	HD	Haiti	HE	Haiti	HF	Haiti	HG	Haiti	HH	Haiti	HI	Haiti	HJ	Haiti	HK	Haiti	HL	Haiti	HM	Haiti	HN	Haiti	HO	Haiti
IA	India	IB	India	IC	India	ID	India	IE	India	IF	India	IG	India	IH	India	II	India	IJ	India	IK	India	IL	India	IM	India	IN	India	IO	India
JA	Japan	JB	Japan	JC	Japan	JD	Japan	JE	Japan	JF	Japan	JG	Japan	JH	Japan	JI	Japan	JJ	Japan	JK	Japan	JL	Japan	JM	Japan	JN	Japan	JO	Japan
KA	Korea	KB	Korea	KC	Korea	KD	Korea	KE	Korea	KF	Korea	KG	Korea	KH	Korea	KI	Korea	KJ	Korea	KK	Korea	KL	Korea	KM	Korea	KN	Korea	KO	Korea
LA	Laos	LB	Laos	LC	Laos	LD	Laos	LE	Laos	LF	Laos	LG	Laos	LH	Laos	LI	Laos	LJ	Laos	LK	Laos	LL	Laos	LM	Laos	LN	Laos	LO	Laos
MA	Mexico	MB	Mexico	MC	Mexico	MD	Mexico	ME	Mexico	MF	Mexico	MG	Mexico	MH	Mexico	MI	Mexico	MJ	Mexico	MK	Mexico	ML	Mexico	MM	Mexico	MN	Mexico	MO	Mexico
NA	Nicaragua	NB	Nicaragua	NC	Nicaragua	ND	Nicaragua	NE	Nicaragua	NF	Nicaragua	NG	Nicaragua	NH	Nicaragua	NI	Nicaragua	NJ	Nicaragua	NK	Nicaragua	NL	Nicaragua	NM	Nicaragua	NO	Nicaragua	NP	Nicaragua
OA	Oman	OB	Oman	OC	Oman	OD	Oman	OE	Oman	OF	Oman	OG	Oman	OH	Oman	OI	Oman	OJ	Oman	OK	Oman	OL	Oman	OM	Oman	ON	Oman	OO	Oman
PA	Panama	PB	Panama	PC	Panama	PD	Panama	PE	Panama	PF	Panama	PG	Panama	PH	Panama	PI	Panama	PJ	Panama	PK	Panama	PL	Panama	PM	Panama	PN	Panama	PO	Panama
QA	Qatar	QB	Qatar	QC	Qatar	QD	Qatar	QE	Qatar	QF	Qatar	QG	Qatar	QH	Qatar	QI	Qatar	QJ	Qatar	QK	Qatar	QL	Qatar	QM	Qatar	QN	Qatar	QO	Qatar
RA	Romania	RB	Romania	RC	Romania	RD	Romania	RE	Romania	RF	Romania	RG	Romania	RH	Romania	RI	Romania	RJ	Romania	RK	Romania	RL	Romania	RM	Romania	RO	Romania	RP	Romania
SA	Saudi Arabia	SB	Saudi Arabia	SC	Saudi Arabia	SD	Saudi Arabia	SE	Saudi Arabia	SF	Saudi Arabia	SG	Saudi Arabia	SH	Saudi Arabia	SI	Saudi Arabia	SJ	Saudi Arabia	SK	Saudi Arabia	SL	Saudi Arabia	SM	Saudi Arabia	SN	Saudi Arabia	SO	Saudi Arabia
TA	Taiwan	TB	Taiwan	TC	Taiwan	TD	Taiwan	TE	Taiwan	TF	Taiwan	TG	Taiwan	TH	Taiwan	TI	Taiwan	TJ	Taiwan	TK	Taiwan	TL	Taiwan	TM	Taiwan	TO	Taiwan	TP	Taiwan
UA	Ukraine	UB	Ukraine	UC	Ukraine	UD	Ukraine	UE	Ukraine	UF	Ukraine	UG	Ukraine	UH	Ukraine	UI	Ukraine	UJ	Ukraine	UK	Ukraine	UL	Ukraine	UM	Ukraine	UN	Ukraine	UO	Ukraine
VA	Venezuela	VB	Venezuela	VC	Venezuela	VD	Venezuela	VE	Venezuela	VF	Venezuela	VG	Venezuela	VH	Venezuela	VI	Venezuela	VJ	Venezuela	VK	Venezuela	VL	Venezuela	VM	Venezuela	VO	Venezuela	VP	Venezuela
WA	Western Samoa	WB	Western Samoa	WC	Western Samoa	WD	Western Samoa	WE	Western Samoa	WF	Western Samoa	WG	Western Samoa	WH	Western Samoa	WI	Western Samoa	WJ	Western Samoa	WK	Western Samoa	WL	Western Samoa	WM	Western Samoa	WN	Western Samoa	WO	Western Samoa
XA	Xenia	XB	Xenia	XC	Xenia	XD	Xenia	XE	Xenia	XF	Xenia	YG	Xenia	YH	Xenia	YI	Xenia	YJ	Xenia	YK	Xenia	YL	Xenia	YM	Xenia	YN	Xenia	YO	Xenia
ZA	Zambia	ZB	Zambia	ZC	Zambia	ZD	Zambia	ZE	Zambia	ZF	Zambia	ZG	Zambia	ZH	Zambia	ZI	Zambia	ZJ	Zambia	ZK	Zambia	ZL	Zambia	ZM	Zambia	ZN	Zambia	ZO	Zambia

RADIO AMATEUR
Prefix Map of the World
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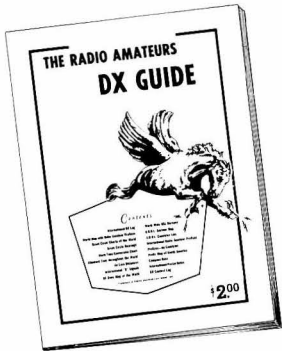
INTERNATIONAL "Q" SIGNALS

Abbreviation	Question	Answer or Advice	Abbreviation	Question	Answer or Advice
QRA	What is the name of your station?	The name of my stations is . . .	QSK	Can you hear me between your signals?	I can hear you between my signals.
QRB	How far approximately are you from my station?	The approximate distance between our stations is . . . nautical miles (or kilometres)	QSL	Can you acknowledge receipt?	I am acknowledging receipt.
QRD	Where are you bound and where are you from?	I am bound for . . . from . . .	QSM	Shall I repeat the last telegram which I sent you, or some previous telegram?	Repeat the last telegram which you sent me [or telegram(s) number(s) . . .].
QRG	Will you tell me my exact frequency or that of . . .?	Your exact frequency (or that of . . .) is . . . kc/s (or Mc/s).	JSN	Did you hear me [or . . . (call sign)] on . . . kc/s (or Mc/s)?	I did hear you [or . . . (call sign)] on . . . kc/s (or Mc/s).
QRH	Does my frequency vary?	Your frequency varies.	QSO	Can you communicate with . . . direct or by relay?	I can communicate with . . . direct (or by relay through . . .).
QRI	How is the tone of my transmission?	The tone of your transmission is . . . (1. Good; 2. Variable; 3. Bad).	QSP	Will you relay to . . . free of charge?	I will relay to . . . free of charge.
QRK	What is the readability of my signals (or those of . . .)?	The readability of your signals (or those of . . .) is . . . (1. Unreadable; 2. Readable now and then; 3. Readable, but with difficulty; 4. Readable; 5. Perfectly readable).	QSQ	Have you a doctor on board [or is . . . (name of person) on board]?	I have a doctor on board [or . . . (name of person) is on board].
QRL	Are you busy?	I am busy (or I am busy with . . .). Please do not interfere.	QSU	Shall I send or reply on this frequency [or on . . . kc/s (or Mc/s)] (with emissions of class . . .)?	Send or reply on this frequency [or on . . . kc/s (or Mc/s)] (with emissions of class . . .).
QRM	Are you being interfered with?	I am being interfered with.	QSV	Shall I send a series of V's on this frequency [or . . . kc/s (or Mc/s)]?	Send a series of V's on this frequency [or . . . kc/s (or Mc/s)].
QRN	Are you troubled by static?	I am troubled by static.	QSW	Will you send on this frequency [or on . . . kc/s (or Mc/s)] (with emissions of class . . .)?	I am going to send on this frequency [or on . . . kc/s (or Mc/s)] (with emissions of class . . .).
QRO	Shall I increase power?	Increase power.			
QRP	Shall I decrease power?	Decrease power.			
QRQ	Shall I send faster?	Send faster (. . . words per minute).			
QRR	Are you ready for automatic operation?	I am ready for automatic operation. Send at . . . words per minute.			
QRS	Shall I send more slowly?	Send more slowly (. . . words per minute).			
QRT	Shall I stop sending?	Stop sending.			
QRU	Have you anything for me?	I have nothing for you.			
QRV	Are you ready?	I am ready.			
QRW	Shall I inform . . . that you are calling him on . . . kc/s (or Mc/s).	Please inform . . . that I am calling him on . . . kc/s (or Mc/s).			
QRX	When will you call me again?	I will call you again at . . . hours [on . . . kc/s (or Mc/s)].			
QRY	What is my turn?	Your turn is Number . . . (Relates to communication.)			
QRZ	Who is calling me?	You are being called by . . . [on . . . kc/s (or Mc/s)].			
QSA	What is the strength of my signals (or those of . . .)?	The strength of your signals (or those of . . .) is . . . (1. Scarcely perceptible; 2. Weak; 3. Fairly good; 4. Good; 5. Very good).			
QSB	Are my signals fading?	Your signals are fading.			
QSD	Is my keying defective?	Your keying is defective.			
QSG	Shall I send . . . telegrams at a time?	Send . . . telegrams at a time.			
QSI	What is the charge to be collected per word to . . . including your internal telegraph charge?	The charge to be collected per word to . . . including my internal telegraph charge is . . . francs.			
QSK	Can you hear me between your signals?	I can hear you between my signals.			
QSL	Can you acknowledge receipt?	I am acknowledging receipt.			
QSM	Shall I repeat the last telegram which I sent you, or some previous telegram?	Repeat the last telegram which you sent me [or telegram(s) number(s) . . .].			
JSN	Did you hear me [or . . . (call sign)] on . . . kc/s (or Mc/s)?	I did hear you [or . . . (call sign)] on . . . kc/s (or Mc/s).			
QSO	Can you communicate with . . . direct or by relay?	I can communicate with . . . direct (or by relay through . . .).			
QSP	Will you relay to . . . free of charge?	I will relay to . . . free of charge.			
QSQ	Have you a doctor on board [or is . . . (name of person) on board]?	I have a doctor on board [or . . . (name of person) is on board].			
QSU	Shall I send or reply on this frequency [or on . . . kc/s (or Mc/s)] (with emissions of class . . .)?	Send or reply on this frequency [or on . . . kc/s (or Mc/s)] (with emissions of class . . .).			
QSV	Shall I send a series of V's on this frequency [or . . . kc/s (or Mc/s)]?	Send a series of V's on this frequency [or . . . kc/s (or Mc/s)].			
QSW	Will you send on this frequency [or on . . . kc/s (or Mc/s)] (with emissions of class . . .)?	I am going to send on this frequency [or on . . . kc/s (or Mc/s)] (with emissions of class . . .).			
QSX	Will you listen to . . . [call sign(s)] on . . . kc/s (or Mc/s)	I am listening to . . . [call sign(s)] on . . . kc/s (or Mc/s).			
QSY	Shall I change to transmission on another frequency?	Change to transmission on another frequency [or on . . . kc/s (or Mc/s)].			
QSZ	Shall I send each word or group more than once?	Send each word or group twice (or . . . times).			
QTA	Shall I cancel telegram number . . . as if it had not been sent?	Cancel telegram number . . . as if it had not been sent.			
QTB	Do you agree with my counting of words?	I do not agree with your counting of words; I will repeat the first letter or digit of each word or group.			
QTC	How many telegrams have you to send?	I have . . . telegrams for you (or for . . .).			
QTE	What is my TRUE bearing from you?	Your TRUE bearing from me is . . . degrees (at . . . hours)			
	or	or			
	What is my TRUE bearing from . . . (call sign)?	Your TRUE bearing from . . . (call sign) was . . . degrees (at . . . hours)			
	or	or			
	What is the TRUE bearing of . . . (call sign) from . . . (call sign)?	The TRUE bearing of . . . (call sign) from . . . (call sign) was . . . degrees (at . . . hours).			
QTG	Will you send two dashes of ten seconds each followed by your call sign (repeated . . . times) [on . . . kc/s (or Mc/s)]?	I am going to send two dashes of ten seconds each followed by my call sign (repeated . . . times) [on . . . kc/s (or Mc/s)]			
	or	or			
	Will you request . . . to send two dashes of ten seconds followed by his call sign (repeated . . . times) on . . . kc/s (or Mc/s)?	I have requested . . . to send two dashes of ten seconds followed by his call sign (repeated . . . times) on . . . kc/s (or Mc/s).			
QTH	What is your position in latitude and longitude (or according to any other indication)?	My position is . . . latitude . . . longitude (or according to any other indication).			
QTI	What is your TRUE track?	My TRUE track is . . . degrees.			
QTI	What is your speed?	My speed is . . . knots (or kilometres per hour).			
QTL	What is your TRUE heading?	My TRUE heading is . . . degrees.			
QTN	At what time did you depart from . . . (place)?	I departed from . . . (place) at . . . hours.			
QTO	Have you left dock (or port)?	I have left dock (or port)			
	or	or			
	Are you airborne?	I am airborne.			
QTP	Are you going to enter dock (or port)?	I am going to enter dock (or port)			
	or	or			
	Are you going to alight (or land)?	I am going to alight (or land).			
QTT	Can you communicate with my station by means of the International Code of Signals?	I am going to communicate with your station by means of the International Code of Signals.			
QTR	What is the correct time?	The correct time is . . . hours.			
QTS	Will you send your call sign for . . . minute(s) now (or at . . . hours) [on . . . kc/s (or Mc/s)] so that your frequency may be measured?	I will send my call sign for . . . minute(s) now (or at . . . hours) [on . . . kc/s (or Mc/s)] so that my frequency may be measured.			
QTT	What are the hours during which your station is open?	My station is open from . . . to . . . hours.			
QTV	Shall I stand guard for you on the frequency of . . . kc/s (or Mc/s) (from . . . to . . . hours)?	Stand guard for me on the frequency of . . . kc/s (or Mc/s) (from . . . to . . . hours).			
QTX	Will you keep your station open for further communication with me until further notice (or until . . . hours)?	I will keep my station open for further communication with you until further notice (or until . . . hours).			
QUA	Have you news of . . . (call sign)?	Here is news of . . . (call sign).			
QUB	Can you give me, in the following order, information concerning: visibility, height of clouds, direction and velocity of ground wind at . . . (place of observation)?	Here is the information requested . . .			
QUC	What is the number (or other indication) of the last message you received from me [or from (call sign)]?	The number (or other indication) of the last message I received from you [or from . . . (call sign)] is . . .			
QUD	Have you received the urgency signal sent by . . . (call sign of mobile station)?	I have received the urgency signal sent by . . . (call sign of mobile station) at . . . hours.			
QUF	Have you received the distress signal sent by . . . (call sign of mobile station)?	I have received the distress signal sent by . . . (call sign of mobile station) at . . . hours.			
QUG	Will you be forced to alight (or land)?	I am forced to alight (or land immediately).			
		or			
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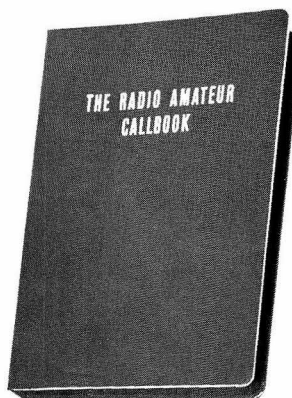
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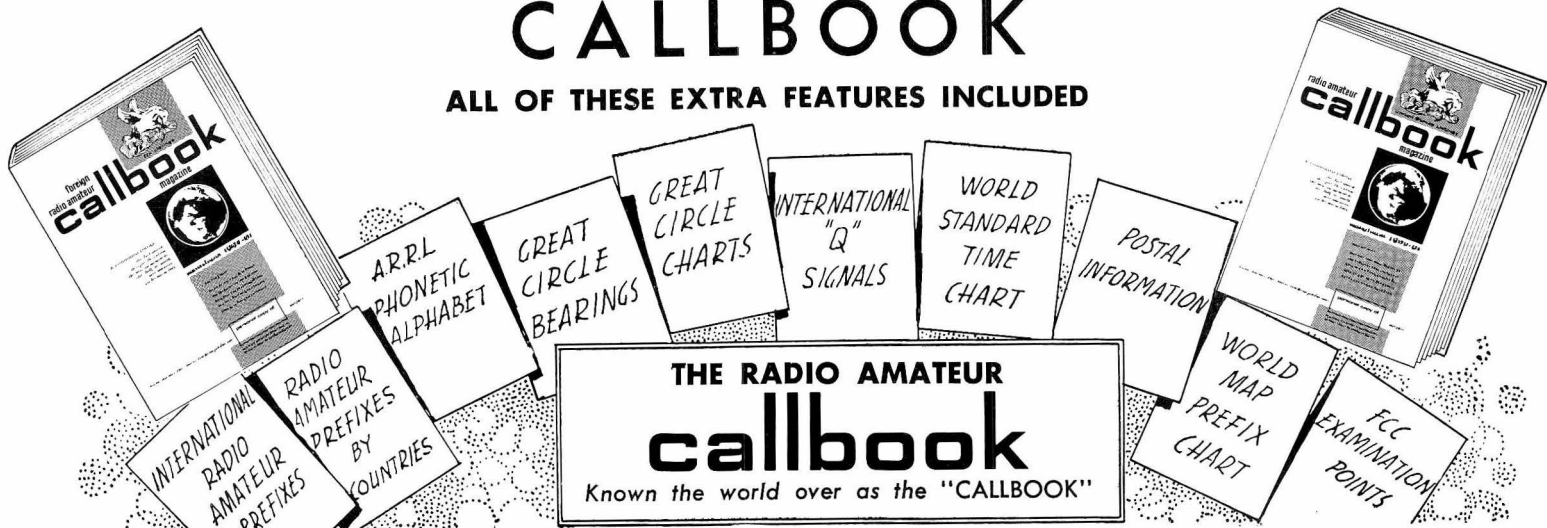
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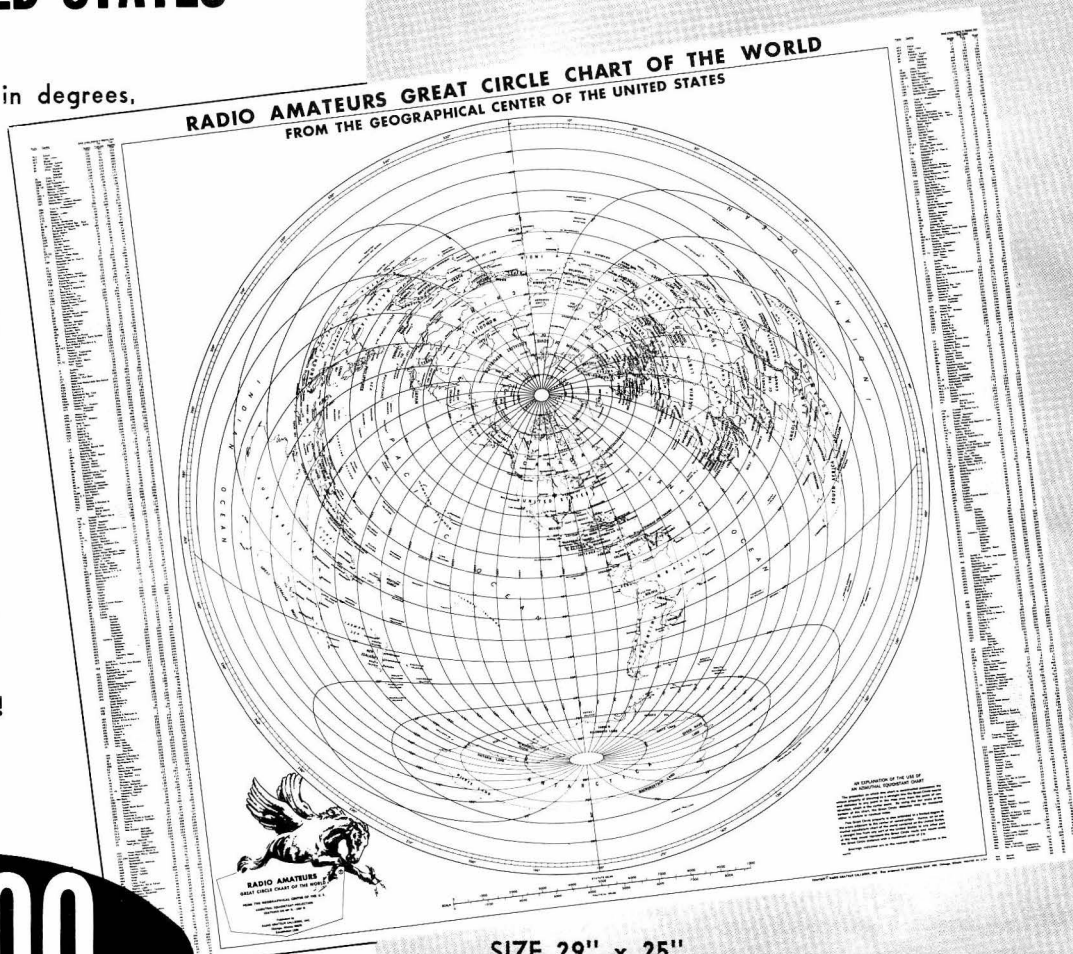
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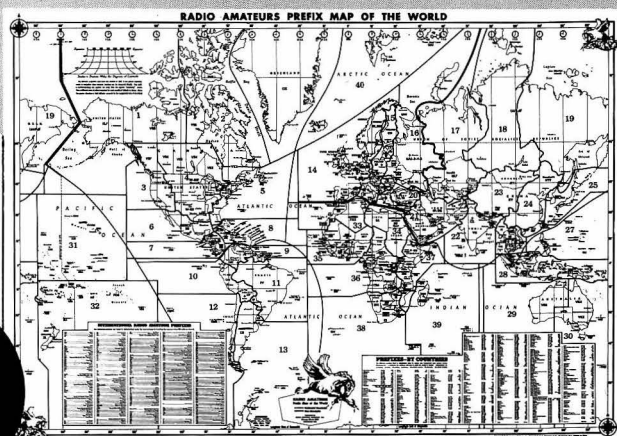
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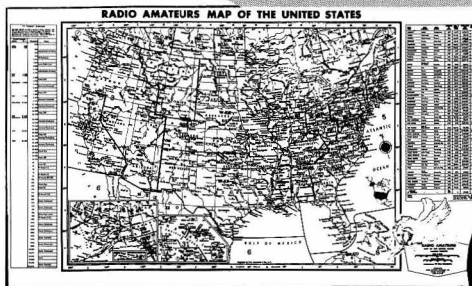
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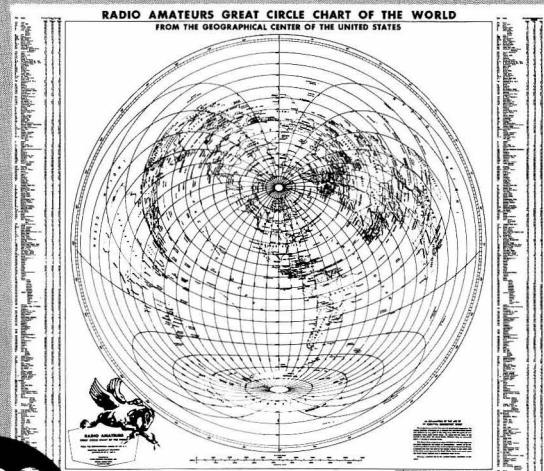
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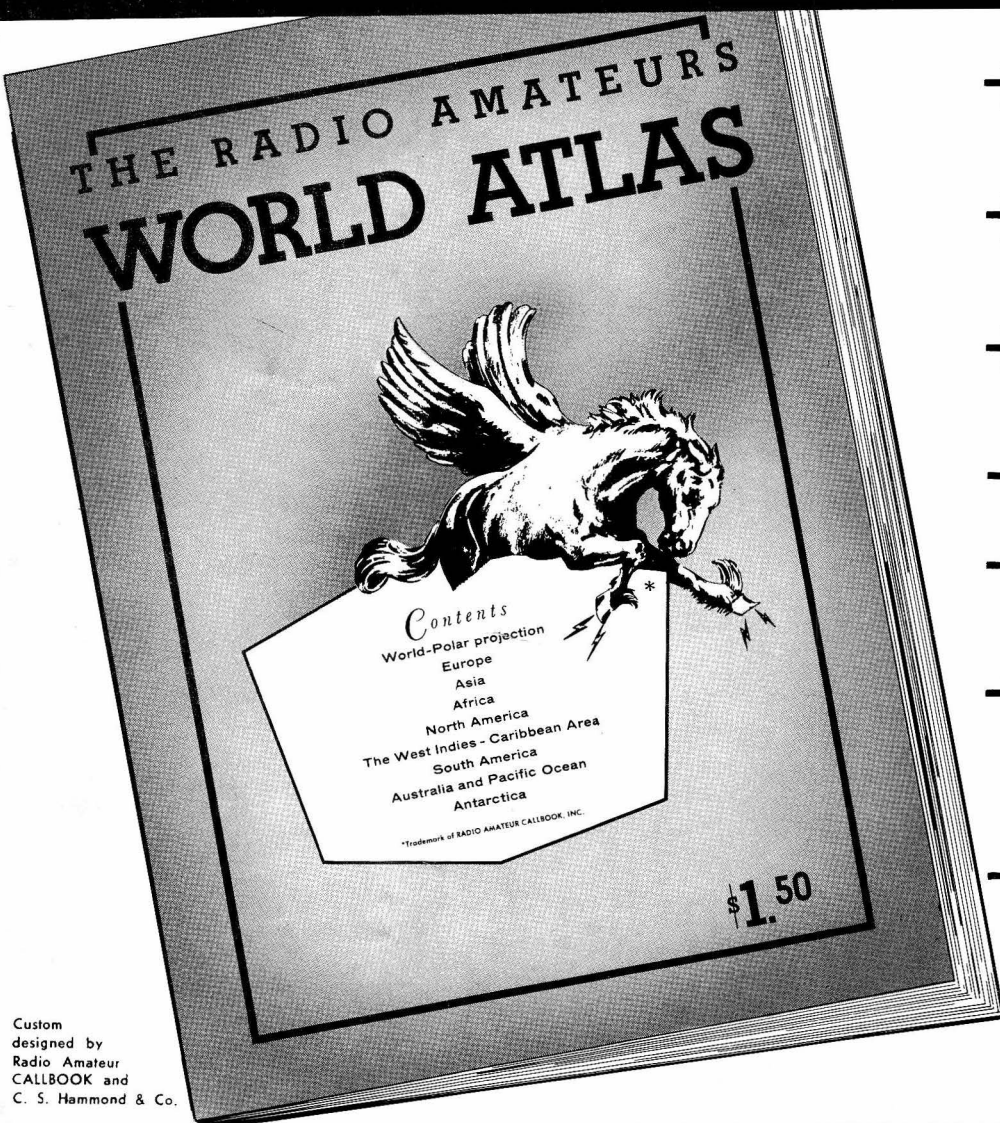
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